STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 123751

To: Christopher Yaen **Location:** REM/3A20/3C18 **Art Unit:** 1642 **Wednesday, June 09, 2004** **Case Serial Number:** 09/538106	**From:** Beverly Shears **Location:** Remsen Bldg. RM 1A54 **Phone:** 571-272-2528 beverly.shears@uspto.gov

Search Notes

Christopher,

This request was not forwarded to Ed Hart. It was placed in the "general pool" of incoming searches. I processed prior to reading CC: addressee.

Beverly

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

Requestor's Name: _____ Serial Number: _____

Date: _____ Phone: _____ Art Unit: _____

Search Topic:
Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

STAFF USE ONLY

Date completed: 06-09-04
Searcher: Beverly c 2528
Terminal time: _____
Elapsed time: _____
CPU time: _____
Total time: _____
Number of Searches: _____
Number of Databases: _____

Search Site
_____ STIC
_____ CM-1
_____ Pre-S

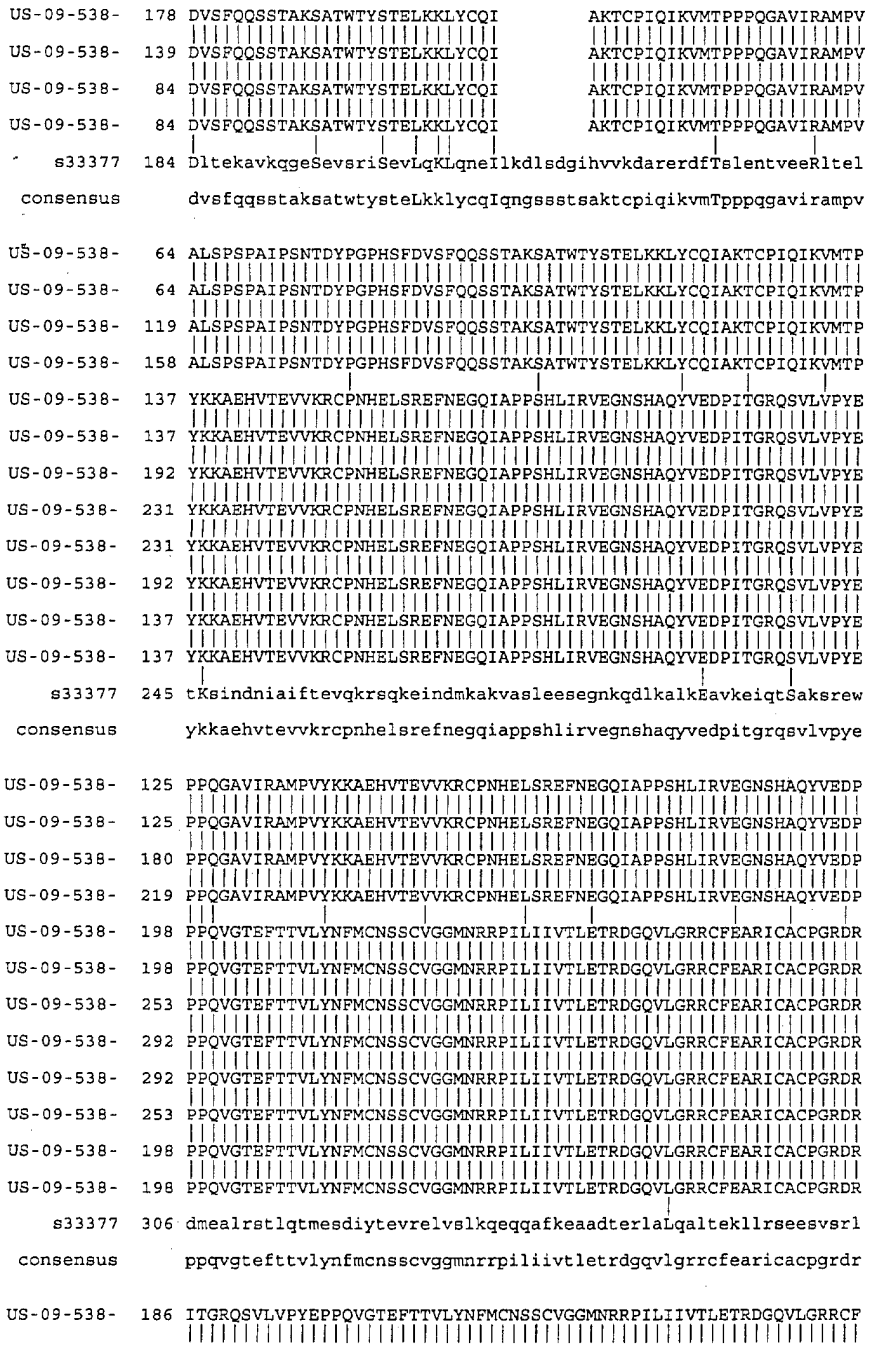
Type of Search
_____ N.A. Sequence
_____ A.A. Sequence
_____ Structure
_____ Bibliographic

Vendors
✓ IG
_____ STN
_____ Dialog
_____ APS
_____ Geninfo
_____ SDC
_____ DARC/Questel
_____ Other

PTO-1590 (9-90)

```
> O <
O| |O  IntelliGenetics
> O <

GENALIGN - Multiple Sequence Alignment Program
Release 5.4

Wed 9 Jun 104 10:05:27-PDT

Solution Parameters:

    Amino Alphabet      = Identity
    Output line length  = 80
    Compress            = Off
    Histogram           = Off
    Randomization       = Off

    AMINO-Res-length    = 2
    DELetion-weight     = 5.00
    LEngth-factor       = 0
    Matching-weight     = 1.00
    NUCLEIC-Res-length  = 4
    SPread-factor       = 50

Clustered order of selected sequences:

   13. US-09-538-106-24     (1-389)
    7. US-09-538-106-18     (1-393)
    4. US-09-538-106-15     (1-448)
   10. US-09-538-106-21     (1-483)
    6. US-09-538-106-17     (1-461)
   12. US-09-538-106-23     (1-461)
    3. US-09-538-106-14     (1-516)
    9. US-09-538-106-20     (1-555)
    8. US-09-538-106-19     (1-680)
    2. US-09-538-106-13     (1-641)
    5. US-09-538-106-16     (1-586)
   11. US-09-538-106-22     (1-586)
    1. s33377               (1-601)

Region Alignment: (listed in Clustered order)

US-09-538-    1
US-09-538-    1
US-09-538-    1
US-09-538-    1
US-09-538-    1                                                                  MLY
US-09-538-    1                                                                  MLY
US-09-538-    1                                               MSQSTQTnEFLSPEVFQHIWDF
US-09-538-    1 MNFETSRCATLQYCPDPYIQRFIETPAHFSWKESYYRSAMSQSTQTSEFLSPEVFQHIWDF
US-09-538-    1 MNFETSRCATLQYCPDPYIQRFIETPAHFSWKESYYRSAMSQSTQTSEFLSPEVFQHIWDF
US-09-538-    1                                               MSQSTQTnEFLSPEVFQHIWDF
US-09-538-    1                                                                  MLY
US-09-538-    1                                                                  MLY
   s33377     1 mpsakqrgskgghgaaspsekgahpsggaddvakkpppapqqpppppaphpqqhpqqhpqn
 consensus      mnfetsrcatlqycpdpyiqrfietpahfswkesyyrsamsqstqt-eflspevfqhi---

US-09-538-    1
```

```
US-09-538-    1
US-09-538-    1
US-09-538-    1                             mnfetsrcatlqycpdpyiqrfieTpahfswkesy
US-09-538-    4 LE          NNAQTQFSE                                PQYTNLGLLNSMDQ
US-09-538-    4 LE          NNAQTQFSE                                PQYTNLGLLNSMDQ
US-09-538-   23 LEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538-   62 LEQPICSVQPIELNFVDEPSENGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538-   62 LEQPICSVQPIELNFVDEPSENGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538-   23 LEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538-    4 LE         NNAQTQFSEP  QYTN                           LGLLNSMDQ
US-09-538-    4 LE         NNAQTQFSEP  QYTN                           LGLLNSMDQ
   s33377    62 qahgkgghrgggggggksssssasaaaaaaaaasssascsrrlgralnflfyLaLvaaaaf
 consensus      leqpicsvqpi-lnfvdepse-gatnkieismdcirmqdsdlsdpmwpqytnlgllnsmdq

US-09-538-    1                       MLYLE          NNAQTQFSE
US-09-538-    1                       MLYLE          NNAQTQFSE
US-09-538-    1    MSQSTQTnEFLSPEVFQHIWDFLEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCI
US-09-538-   36 yrsaMSQSTQTsEFLSPEVFQHIWDFLEQPICSVQPIeLNFVDEPSEnGATNKIEISMDCI
US-09-538-   29 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-   29 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-   84 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-  123 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-  123 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-   84 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-   29 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538-   29 QIQNGSSST           SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
   s33377   123 sgwcvhhvleevqqvrrshqDfsrqreelgqglqgveqkvqsLqatfgtfesilrssqHkq
 consensus      qiqngssstqt-eflspyntdhaqnsvtapspyaqpsstfdalspspaipsntdypgphsf

US-09-538-   15           PQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538-   15           PQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538-   58 RMQDSDLSDPMWPQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538-   97 RMQDSDLSDPMWPQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538-   84 DVSFQQSSTAKSATWTYSTELKKLYCQI          AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538-   84 DVSFQQSSTAKSATWTYSTELKKLYCQI          AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538-  139 DVSFQQSSTAKSATWTYSTELKKLYCQI          AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538-  178 DVSFQQSSTAKSATWTYSTELKKLYCQI          AKTCPIQIKVMTPPPQGAVIRAMPV
```


US-09-538- 178 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 139 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
s33377 184 DltekavkqgeSevsriSevLqKLqneIlkdlsdgihvvkdarerdfTslentveeRltel
consensus dvsfqqsstaksatwtysteLkklycqIqngssstsaktcpiqikvmTpppqgaviramPv
US-09-538- 64 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 64 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 119 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 158 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 192 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 231 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 231 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 192 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
s33377 245 tKsindniaiftevqkrsqkeindmkakvasleesegnkqdlkalkEavkeiqtSaksrew
consensus ykkaehvtevvkrcpnhelsrefnegqiappshlirvegnshaqyvedpitgrqsvlvpye
US-09-538- 125 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 125 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 180 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 219 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 253 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 292 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 292 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 253 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
s33377 306 dmealrstlqtmesdiytevrelvslkqeqqafkeaadterlaLqalteklLrseesvsrl
consensus ppqvgtefttvlynfmcnsscvggmnrrpiliivtletrdgqvlgrrcfearicacpgrdr
US-09-538- 186 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 186 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 241 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 280 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 259 KADEDSIRKQQVSDStKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSaKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 314 KADEDSIRKQQVSDStKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 353 KADEDSIRKQQVSDSAKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 353 KADEDSIRKQQVSDSAKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 314 KADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSaKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
s33377 367 peeirrleeelrqlksdshgpkedggfrhseafealqqKsqgldsrlqhvedgvlsmqvas
consensus kadedsirkqqvsds-kngdgtkrpfrqnthgiqmtsikkrrspddellylpvrgretyem
US-09-538- 247 EARICACPGRDRKADEDSIRKQQVSDSaKNGD aFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 247 EARICACPGRDRKADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 302 EARICACPGRDRKADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 341 EARICACPGRDRKADEDSIRKQQVSDSaKNGD aFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSiQSpSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSmQSqSSYGNSSPPLNKMNSMNK
US-09-538- 375 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSiQSpSSYGNSSPPLNKMNSMNK
US-09-538- 414 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSMQSQSSYGNSSPPLNKMNSMNK
US-09-538- 414 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSMQSQSSYGNSSPPLNKMNSMNK
US-09-538- 375 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSIQSPSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSIQSPSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSmQSqSSYGNSSPPLNKMNSMNK
s33377 428 arqteslesLlsksqeHeqrlapagaleglgsseadQdglaStvrslgetqlvlygdveel
consensus llkikeslelmqylpqhtietyrqqqqqqhqhllqkqts-qs-ssygnsspplnkmnsmnk
US-09-538- 304 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 308 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 363 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 398 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 381 LPSVSQLINPQQRNALTPTTiPdGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 381 LPSVSQLINPQQRNALTPTTmPeGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 436 LPSVSQLINPQQRNALTPTTiPdGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 475 LPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 475 LPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS

```
                 |||||||||||||||||||| | ||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  436 LPSVSQLINPQQRNALTPTTIPDGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  381 LPSVSQLINPQQRNALTPTTIPDGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
                 |||||||||||||||||||| | ||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  381 LPSVSQLINPQQRNALTPTTmPeGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
                   ||  |                                                    |
    s33377  489 krSVgeLpstveslqkvqeqvhtllsqdqaqaarlpPqdfldrlsSldnlkasvsqveadl

 consensus      lpsVsqlinpqqrnaltptt-p-gmganipmmgthmpmagdmnglsptqalppplsmpsts


US-09-538-  365 PRgEaPtQSDVFFRHSnPPNhSVYP
                 || | | ||||||||| ||| ||||
US-09-538-  369 PRRETPKQSDVFFRHSKPPNRSVYP
                 ||||||||||||||||||||||||
US-09-538-  424 PRRETPKQSDVFFRHSKPPNRSVYP
                 || | | ||||||||| ||| ||||
US-09-538-  459 PRgEaPtQSDVFFRHSnPPNhSVYP
                          |
US-09-538-  442 HCTPPPPYPTDCSIV
                 |||||||||||||||
US-09-538-  442 HCTPPPPYPTDCSIV
                 |||||||||||||||
US-09-538-  497 HCTPPPPYPTDCSIV
                 |||||||||||||||
US-09-538-  536 HCTPPPPYPTDCSIV
                 |||||||||||||||
US-09-538-  536 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  497 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  442 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  442 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
                                   |
    s33377  550 kmlrtavdslvaysVkietnennlesakgllddlrndldrlfvkvekihekv

 consensus      hctppppyptdcsivsf--nl----cldyfttqglttiyqiehysmddlaslkipeqfrha


US-09-538-  390
US-09-538-  394
US-09-538-  449
US-09-538-  484
US-09-538-  457
US-09-538-  457
US-09-538-  512
US-09-538-  551

US-09-538-  597 IWKGILDHRQLHdFSSPpHLLRTPSgASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
                 |||||||||||| |||| ||||||| ||||||||||||||||||||||||||||||||||||||||||
US-09-538-  558 IWKGILDHRQLHEFSSPSHLLRTPSSASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
                 |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-  503 IWKGILDHRQLHEFSSPSHLLRTPSSASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
                 |||||||||||| |||| ||||||| ||||||||||||||||||||||||||||||||||||||||||
US-09-538-  503 IWKGILDHRQLHdFSSPpHLLRTPSgASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
    s33377  602

 consensus      iwkgildhrqlh-fssp-hllrtps-astvsvgssetrgervidavrftlrqtisfpprde


US-09-538-  390
US-09-538-  394
```

```
US-09-538-  449
US-09-538-  484
US-09-538-  457                  RIWQV
                                 |||||
US-09-538-  457                  RIWQV
                                 |||||
US-09-538-  512                  RIWQV
                                 |||||
US-09-538-  551                  RIWQV
                                 ||
US-09-538-  658 WNDFNFDMDsRRNKQQRIKEEGE
                 ||||||||| ||||||||||||||
US-09-538-  619 WNDFNFDMDARRNKQQRIKEEGE
                 |||||||||||||||||||||||
US-09-538-  564 WNDFNFDMDARRNKQQRIKEEGE
                 ||||||||| ||||||||||||||
US-09-538-  564 WNDFNFDMDsRRNKQQRIKEEGE
    s33377  602

 consensus      wndfnfdmd-rrnkqqri---ge
```

Alignment score = -6012.00

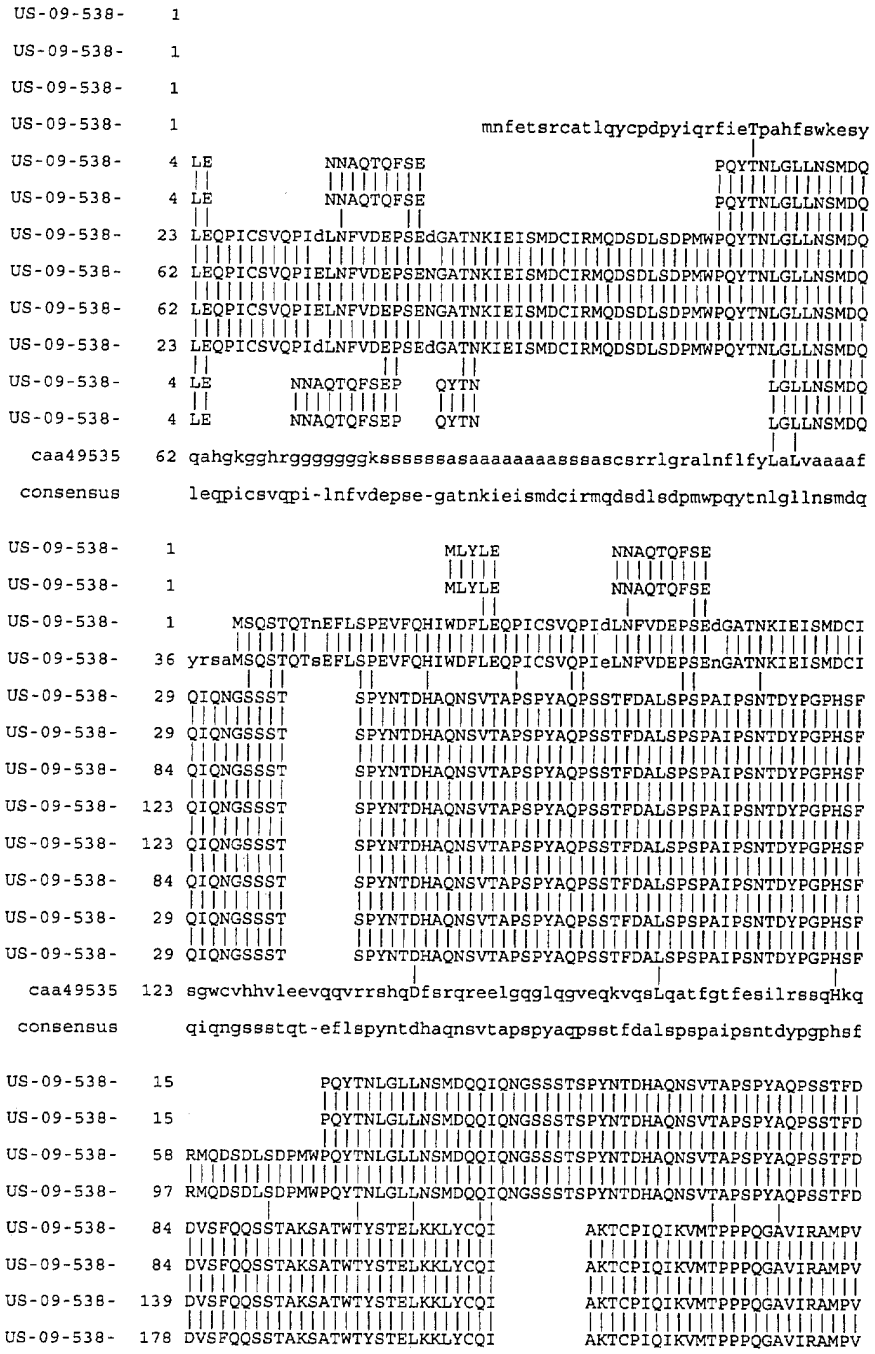
Scoring matrix:

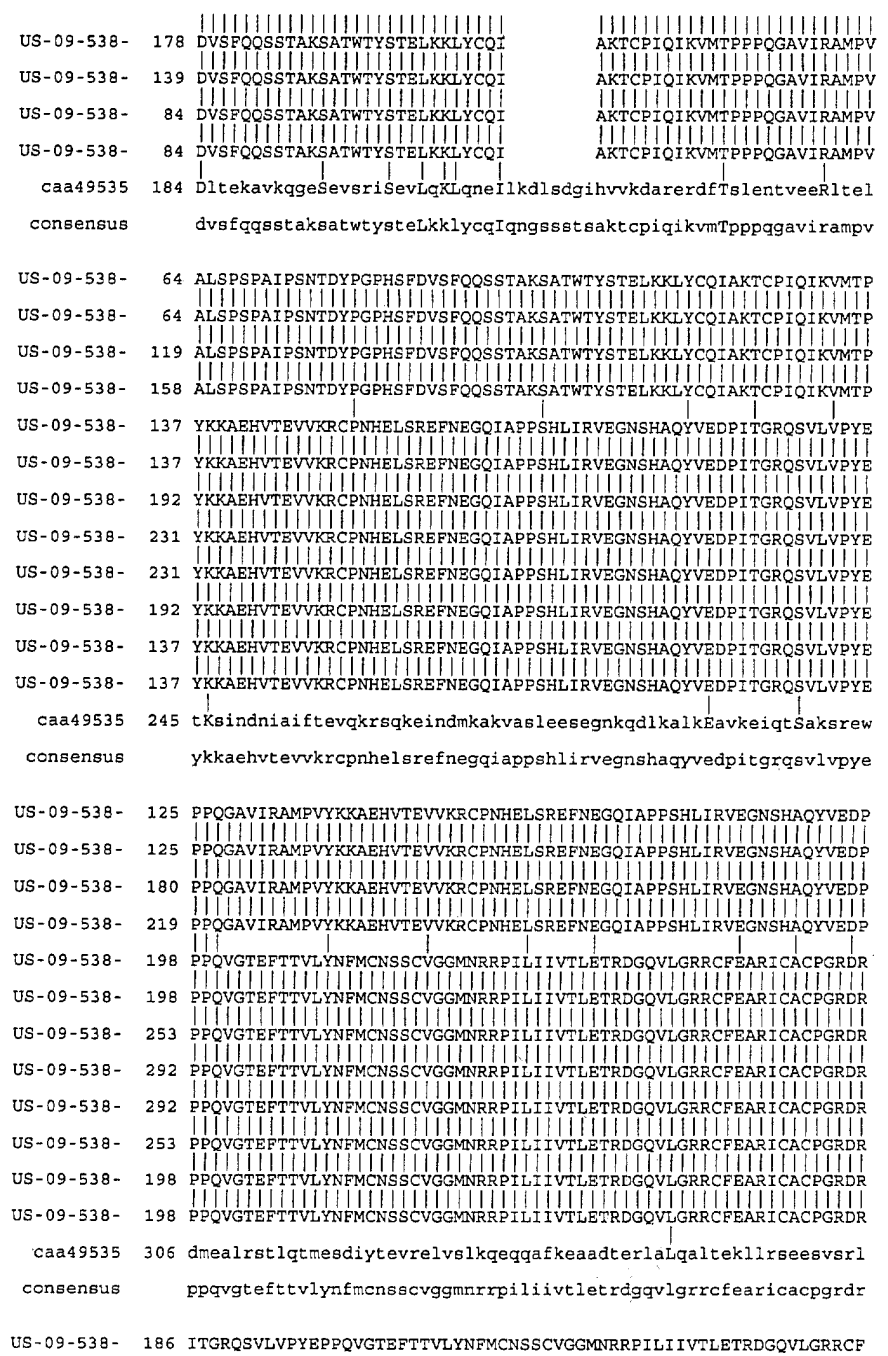
	1	2	3	4	5	6	7	8	9	10	11	12
1		-190	-399	-734	-75	-668	-1003	-366	-216	-554	-75	-668
2			-112	-548	293	-452	-888	434	-315	-769	292	-457
3				76	-314	168	-264	-315	313	-147	-321	171
4					-646	-44	108	-747	-123	219	-648	-54
5						-167	-603	97	-148	-462	577	-172
6							21	-652	-24	-91	-172	456
7								-1084	-460	-118	-604	20
8									-73	-529	106	-647
9										91	-148	-19
10											-469	-91
11												-167
12												
13												

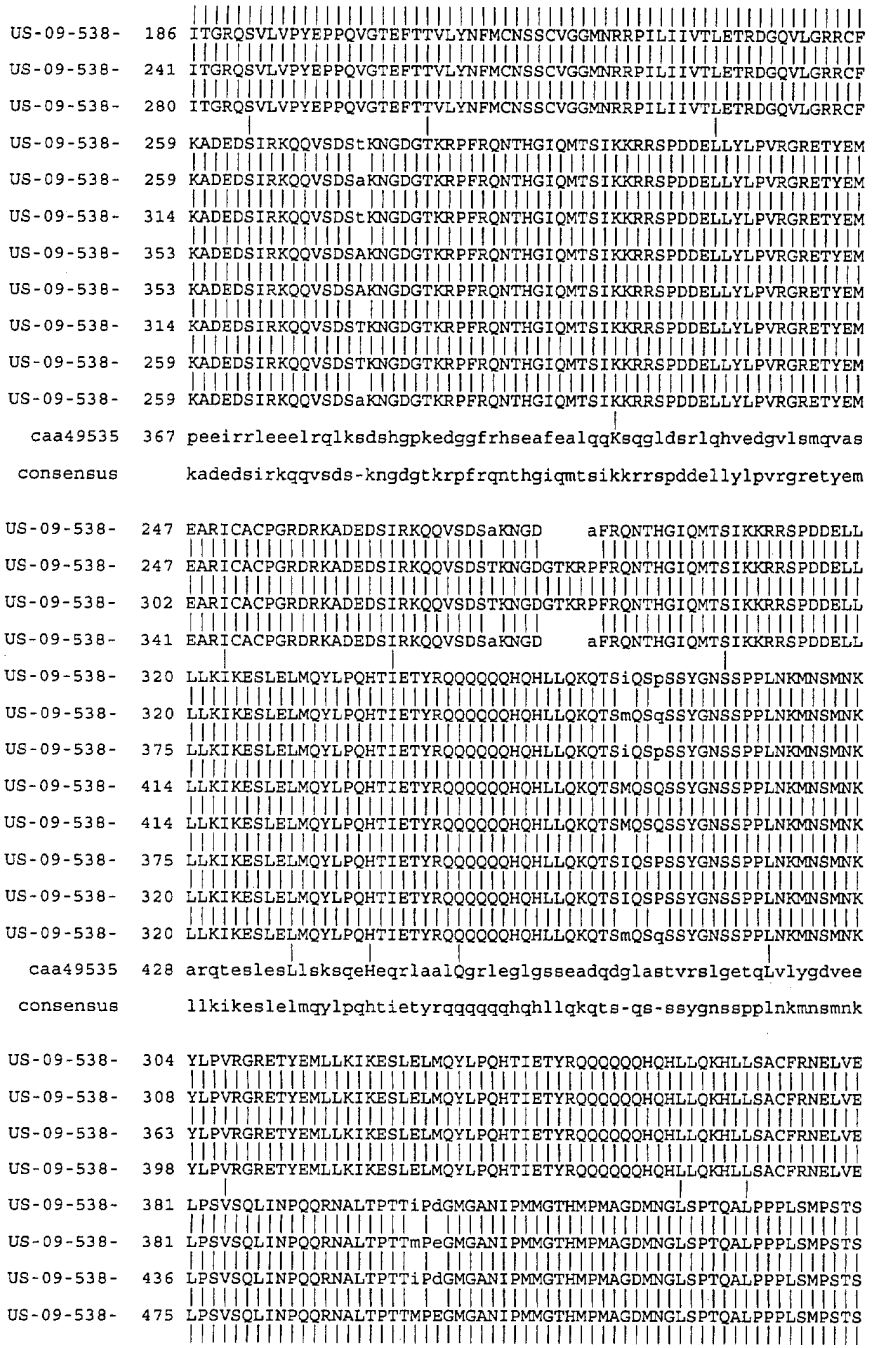
	13
1	-1019
2	-911
3	-289
4	77

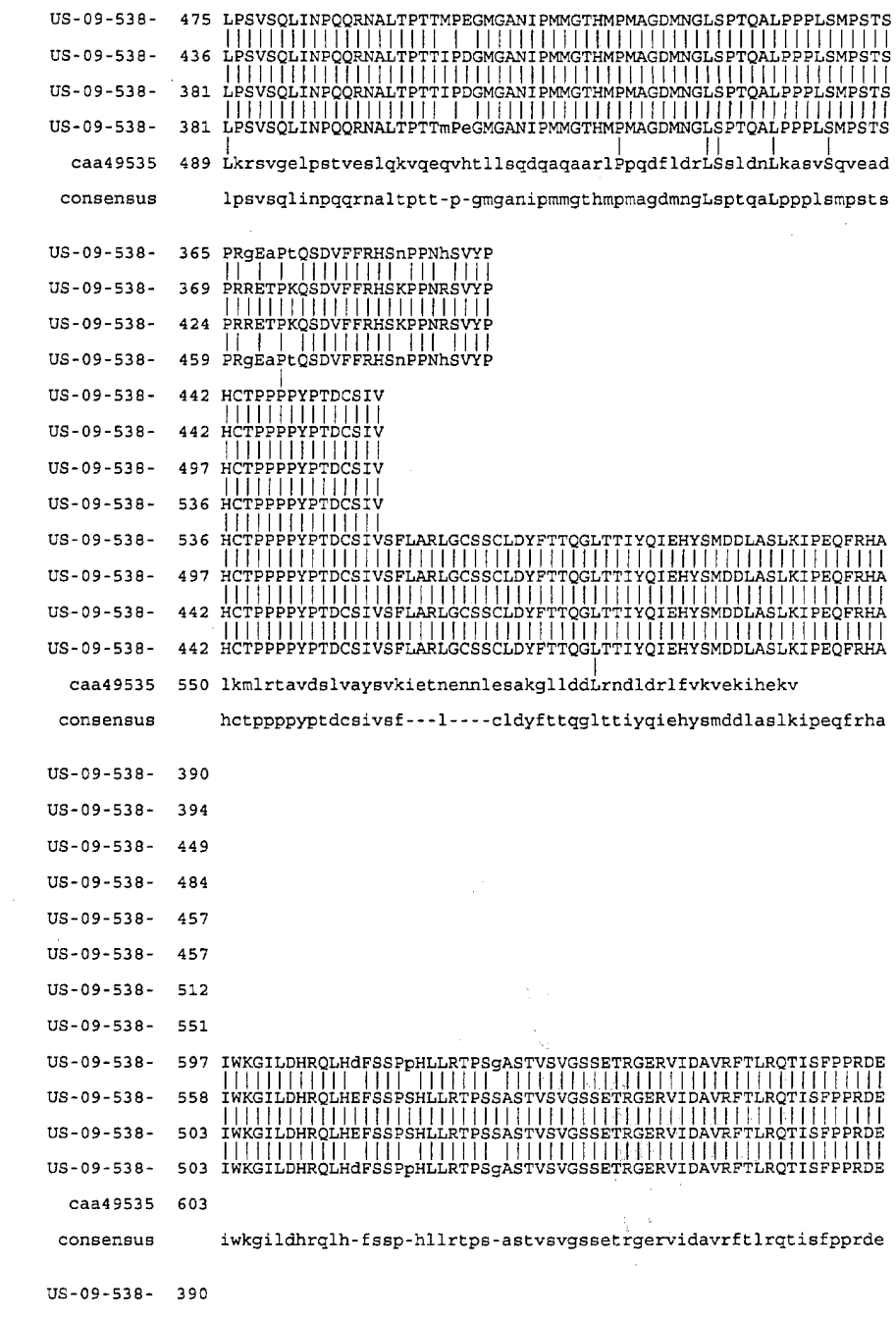
5	-626
6	-4
7	362
8	-1103
9	-483
10	-91
11	-623
12	-3
13	

```
> O <
O| |O  IntelliGenetics
> O <

GENALIGN - Multiple Sequence Alignment Program
Release 5.4

Wed 9 Jun 104 10:07:05-PDT

Solution Parameters:

    Amino Alphabet     = Identity
    Output line length = 80
    Compress           = Off
    Histogram          = Off
    Randomization      = Off

    AMINO-Res-length   = 2
    DELetion-weight    = 5.00
    LEngth-factor      = 0
    Matching-weight    = 1.00
    NUCLEIC-Res-length = 4
    SPread-factor      = 50

Clustered order of selected sequences:

    13. US-09-538-106-24      (1-389)
     7. US-09-538-106-18      (1-393)
     4. US-09-538-106-15      (1-448)
    10. US-09-538-106-21      (1-483)
     6. US-09-538-106-17      (1-461)
    12. US-09-538-106-23      (1-461)
     3. US-09-538-106-14      (1-516)
     9. US-09-538-106-20      (1-555)
     8. US-09-538-106-19      (1-680)
     2. US-09-538-106-13      (1-641)
     5. US-09-538-106-16      (1-586)
    11. US-09-538-106-22      (1-586)
    22. caa49535              (1-602)


Region Alignment: (listed in Clustered order)

US-09-538-    1
US-09-538-    1
US-09-538-    1
US-09-538-    1
US-09-538-    1                                                                MLY
                                                                               |||
US-09-538-    1                                                                MLY
US-09-538-    1                                                MSQSTQTnEFLSPEVFQHIWDF
                                                               ||||||| ||||||||||||||
US-09-538-    1 MNFETSRCATLQYCPDPYIQRFIETPAHFSWKESYYRSAMSQSTQTSEFLSPEVFQHIWDF
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
US-09-538-    1 MNFETSRCATLQYCPDPYIQRFIETPAHFSWKESYYRSAMSQSTQTSEFLSPEVFQHIWDF
                                                               ||||||| ||||||||||||||
US-09-538-    1                                                MSQSTQTnEFLSPEVFQHIWDF
US-09-538-    1                                                                MLY
                                                                               |||
US-09-538-    1                                                                MLY

  caa49535    1 mpsakqrgskgghgaaspsekgahpsggaddvakkpppapqqpppppaphpqqhpqqhpqn

 consensus      mnfetsrcatlqycpdpyiqrfietpahfswkesyyrsamsqstqt-eflspevfqhi---
```


US-09-538- 1
US-09-538- 1
US-09-538- 1
US-09-538- 1 mnfetsrcatlqycpdpyiqrfieTpahfswkesy
US-09-538- 4 LE NNAQTQFSE PQYTNLGLLNSMDQ
US-09-538- 4 LE NNAQTQFSE PQYTNLGLLNSMDQ
US-09-538- 23 LEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538- 62 LEQPICSVQPIELNFVDEPSENGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538- 62 LEQPICSVQPIELNFVDEPSENGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538- 23 LEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQ
US-09-538- 4 LE NNAQTQFSEP QYTN LGLLNSMDQ
US-09-538- 4 LE NNAQTQFSEP QYTN LGLLNSMDQ
caa49535 62 qahgkgghrgggggggkssssssasaaaaaaaassasascsrrlgralnflfyLaLvaaaaf
consensus leqpicsvqpi-lnfvdepse-gatnkieismdcirmqdsdlsdpmwpqytnlgllnsmdq
US-09-538- 1 MLYLE NNAQTQFSE
US-09-538- 1 MLYLE NNAQTQFSE
US-09-538- 1 MSQSTQTnEFLSPEVFQHIWDFLEQPICSVQPIdLNFVDEPSEdGATNKIEISMDCI
US-09-538- 36 yrsaMSQSTQTsEFLSPEVFQHIWDFLEQPICSVQPIeLNFVDEPSEnGATNKIEISMDCI
US-09-538- 29 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 29 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 84 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 123 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 123 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 84 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 29 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
US-09-538- 29 QIQNGSSST SPYNTDHAQNSVTAPSPYAQPSSTFDALSPSPAIPSNTDYPGPHSF
caa49535 123 sgwcvhhvleevqqvrrshqDfsrqreelgqglqgveqkvqsLqatfgtfesilrssqHkq
consensus qiqngssstqt-eflspyntdhaqnsvtapspyaqpsstfdalspspaipsntdypgphsf
US-09-538- 15 PQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538- 15 PQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538- 58 RMQDSDLSDPMWPQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538- 97 RMQDSDLSDPMWPQYTNLGLLNSMDQQIQNGSSSTSPYNTDHAQNSVTAPSPYAQPSSTFD
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 139 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 178 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV


US-09-538- 178 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 139 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
US-09-538- 84 DVSFQQSSTAKSATWTYSTELKKLYCQI AKTCPIQIKVMTPPPQGAVIRAMPV
caa49535 184 DltekavkqgeSevsriSevLqKLqneIlkdlsdgihvvkdarerdfTslentveeRltel
consensus dvsfqqsstaksatwtysteLkklycqIqngssstsaktcpiqikvmTpppqgaviramPv
US-09-538- 64 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 64 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 119 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 158 ALSPSPAIPSNTDYPGPHSFDVSFQQSSTAKSATWTYSTELKKLYCQIAKTCPIQIKVMTP
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 192 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 231 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 231 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 192 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
US-09-538- 137 YKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDPITGRQSVLVPYE
caa49535 245 tKsindniaiftevqkrsqkeindmkakvasleesegnkqdlkalkEavkeiqtSaksrew
consensus ykkaehvtevvkrcpnhelsrefnegqiappshlirvegnshaqyvedpitgrqsvlvpye
US-09-538- 125 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 125 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 180 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 219 PPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIRVEGNSHAQYVEDP
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 253 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 292 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 292 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 253 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
US-09-538- 198 PPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCFEARICACPGRDR
caa49535 306 dmealrstlqtmesdiytevrelvslkqeqqafkeaadterlaLqalteklLrseesvsrl
consensus ppqvgtefttvlynfmcnsscvggmnrrpiliivtletrdgqvlgrrcfearicacpgrdr
US-09-538- 186 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF


US-09-538- 186 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 241 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 280 ITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRRCF
US-09-538- 259 KADEDSIRKQQVSDStKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSaKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 314 KADEDSIRKQQVSDStKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 353 KADEDSIRKQQVSDSaKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 353 KADEDSIRKQQVSDSAKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 314 KADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
US-09-538- 259 KADEDSIRKQQVSDSaKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELLYLPVRGRETYEM
caa49535 367 peeirrleeelrqlksdshgpkedggfrhseafealqqKsqgldsrlqhvedgvlsmqvas
consensus kadedsirkqqvsds-kngdgtkrpfrqnthgiqmtsikkrrspddellylpvrgretyem
US-09-538- 247 EARICACPGRDRKADEDSIRKQQVSDSaKNGD aFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 247 EARICACPGRDRKADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 302 EARICACPGRDRKADEDSIRKQQVSDSTKNGDGTKRPFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 341 EARICACPGRDRKADEDSIRKQQVSDSaKNGD aFRQNTHGIQMTSIKKRRSPDDELL
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSiQSpSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSmQSqSSYGNSSPPLNKMNSMNK
US-09-538- 375 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSiQSpSSYGNSSPPLNKMNSMNK
US-09-538- 414 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSMQSQSSYGNSSPPLNKMNSMNK
US-09-538- 414 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSMQSQSSYGNSSPPLNKMNSMNK
US-09-538- 375 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSIQSPSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSIQSPSSYGNSSPPLNKMNSMNK
US-09-538- 320 LLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKQTSmQSqSSYGNSSPPLNKMNSMNK
caa49535 428 arqteslesLlsksqeHeqrlaalQgrleglgsseadqdglastvrslgetqLvlygdvee
consensus llkikeslelmqylpqhtietyrqqqqqqhqhllqkqts-qs-ssygnsspplnkmnsmnk
US-09-538- 304 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 308 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 363 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 398 YLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQHQHLLQKHLLSACFRNELVE
US-09-538- 381 LPSVSQLINPQQRNALTPTTiPdGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 381 LPSVSQLINPQQRNALTPTTmPeGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 436 LPSVSQLINPQQRNALTPTTiPdGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 475 LPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS


US-09-538- 475 LPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 436 LPSVSQLINPQQRNALTPTTIPDGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 381 LPSVSQLINPQQRNALTPTTIPDGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
US-09-538- 381 LPSVSQLINPQQRNALTPTTmPeGMGANIPMMGTHMPMAGDMNGLSPTQALPPPLSMPSTS
caa49535 489 LkrsvgelpstveslqkvqeqvhtllsqdqaqaarlPpqdfldrLSsldnLkasvSqvead
consensus lpsvsqlinpqqrnaltptt-p-gmganipmmgthmpmagdmngLsptqaLppplsmpsts
US-09-538- 365 PRgEaPtQSDVFFRHSnPPNhSVYP
US-09-538- 369 PRRETPKQSDVFFRHSKPPNRSVYP
US-09-538- 424 PRRETPKQSDVFFRHSKPPNRSVYP
US-09-538- 459 PRgEaPtQSDVFFRHSnPPNhSVYP
US-09-538- 442 HCTPPPPYPTDCSIV
US-09-538- 442 HCTPPPPYPTDCSIV
US-09-538- 497 HCTPPPPYPTDCSIV
US-09-538- 536 HCTPPPPYPTDCSIV
US-09-538- 536 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
US-09-538- 497 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
US-09-538- 442 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
US-09-538- 442 HCTPPPPYPTDCSIVSFLARLGCSSCLDYFTTQGLTTIYQIEHYSMDDLASLKIPEQFRHA
caa49535 550 lkmlrtavdslvaysvkietnennlesakglldd Lrndldrlfvkvekihekv
consensus hctppppyptdcsivsf---l----cldyfttqglttiyqiehysmddlaslkipeqfrha
US-09-538- 390
US-09-538- 394
US-09-538- 449
US-09-538- 484
US-09-538- 457
US-09-538- 457
US-09-538- 512
US-09-538- 551
US-09-538- 597 IWKGILDHRQLHdFSSPpHLLRTPSgASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
US-09-538- 558 IWKGILDHRQLHEFSSPSHLLRTPSSASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
US-09-538- 503 IWKGILDHRQLHEFSSPSHLLRTPSSASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
US-09-538- 503 IWKGILDHRQLHdFSSPpHLLRTPSgASTVSVGSSETRGERVIDAVRFTLRQTISFPPRDE
caa49535 603
consensus iwkgildhrqlh-fssp-hllrtps-astvsvgssetrgervidavrftlrqtisfpprde
US-09-538- 390

```
US-09-538-  394
US-09-538-  449
US-09-538-  484
US-09-538-  457                  RIWQV
                                 |||||
US-09-538-  457                  RIWQV
                                 |||||
US-09-538-  512                  RIWQV
                                 |||||
US-09-538-  551                  RIWQV
                                 ||
US-09-538-  658 WNDFNFDMDsRRNKQQRIKEEGE
                |||||||| ||||||||||||
US-09-538-  619 WNDFNFDMDARRNKQQRIKEEGE
                |||||||||||||||||||||||
US-09-538-  564 WNDFNFDMDARRNKQQRIKEEGE
                |||||||| ||||||||||||
US-09-538-  564 WNDFNFDMDsRRNKQQRIKEEGE
  caa49535  603
 consensus      wndfnfdmd-rrnkqqri---ge
```

Alignment score = -6009.00

Scoring matrix:

	22	2	3	4	5	6	7	8	9	10	11	12
22		-185	-404	-739	-80	-673	-1008	-356	-221	-558	-80	-673
2			-112	-548	293	-452	-888	434	-315	-769	292	-457
3				76	-314	168	-264	-315	313	-147	-321	171
4					-646	-44	108	-747	-123	219	-648	-54
5						-167	-603	97	-148	-462	577	-172
6							21	-652	-24	-91	-172	456
7								-1084	-460	-118	-604	20
8									-73	-529	106	-647
9										91	-148	-19
10											-469	-91
11												-167
12												
13												

	13
22	-1024
2	-911
3	-289
4	77
5	-626
6	-4
7	362
8	-1103
9	-483
10	-91
11	-623
12	-3
13	

```
> O <
O| |O  IntelliGenetics
> O <
```

FastDB - Fast Pairwise Comparison of Sequences
Release 5.4

Results file caa49535.res made by bshears on Wed 9 Jun 104 10:10:28-PDT.

```
Query sequence being compared:    caa49535 (1-602)
Number of sequences searched:                   12
Number of scores above cutoff:                  12
```

Results of the initial comparison of caa49535 (1-602) with:
File : /home/bshears/new.pep

```
   100-
      -
N     -
U  50-
M     -
B     -
E     -
R     -
      -
O     -
F  10-
      -
S     -
E   5-                          *        *
Q     -                                          *
U     -
E     -
N     -
C     -
E     -
S   0-----------------------------------------------------
      ||    |  |   |   | |    |    | |    |  |    |    |
SCORE 0|    1  |   2   | 2    3    4 |    5  |  5    6    7
STDEV -5      -4      -2        -1     0       1
```

PARAMETERS

```
Similarity matrix      Unitary    K-tuple              2
Mismatch penalty             1    Joining penalty     20
Gap penalty               1.00    Window size         32
Gap size penalty          0.05
Cutoff score                 0
Randomization group          0
```

SEARCH STATISTICS

```
Scores:              Mean      Median     Standard Deviation
                       5          7            0.83

Times:               CPU                  Total Elapsed
                  00:00:00.00              00:00:00.00

Number of residues:              6199
Number of sequences searched:      12
Number of scores above cutoff:     12
```

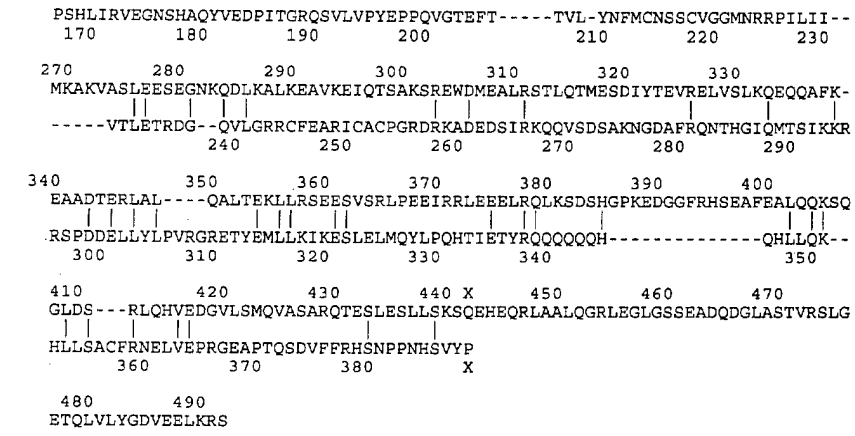
The scores below are sorted by initial score.
Significance is calculated based on initial score.

A 100% identical sequence to the query sequence was not found.

The list of best scores is:

```
                                                              Init. Opt.
Sequence Name      Description                         Length Score Score  Sig. Frame
---------------------------------------------------------------------------------------
                     ****  2 standard deviations above mean ****
  1. US-09-538-106-24 Sequence 24, Application          389     7    61    2.40    0
  2. US-09-538-106-18 Sequence 18, Application          393     7    61    2.40    0
  3. US-09-538-106-15 Sequence 15, Application          448     7    66    2.40    0
                     ****  1 standard deviation above mean ****
  4. US-09-538-106-22 Sequence 22, Application          586     6    77    1.20    0
  5. US-09-538-106-16 Sequence 16, Application          586     6    78    1.20    0
  6. US-09-538-106-13 Sequence 13, Application          641     6    78    1.20    0
  7. US-09-538-106-19 Sequence 19, Application          680     6    77    1.20    0
                     ****  0 standard deviation from mean ****
  8. US-09-538-106-23 Sequence 23, Application          461     5    28    0.00    0
  9. US-09-538-106-17 Sequence 17, Application          461     5    28    0.00    0
 10. US-09-538-106-21 Sequence 21, Application          483     5    79    0.00    0
 11. US-09-538-106-14 Sequence 14, Application          516     5    74    0.00    0
 12. US-09-538-106-20 Sequence 20, Application          555     5    74    0.00    0
```

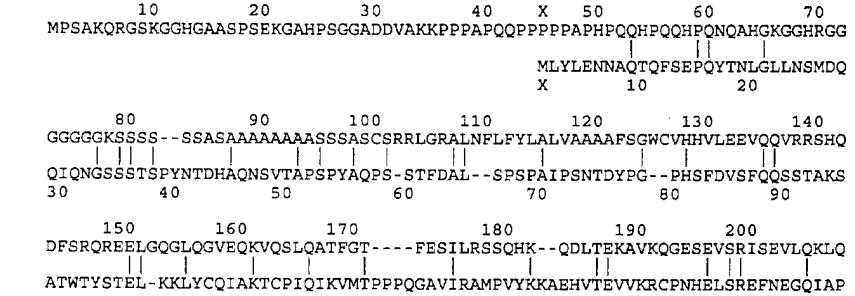
```
1. caa49535 (1-602)
   US-09-538-106-24 Sequence 24, Application US/09538106

 Sequence 24, Application US/09538106
 GENERAL INFORMATION:
  APPLICANT: MCKEON, FRANK
  APPLICANT:  YANG, ANNIE
  APPLICANT:  LODA, MASSIMO
  APPLICANT:  SIGNORETTI, SABINA
  APPLICANT:  CRUM, CHRISTOPHER
  TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
  TITLE OF INVENTION:  RELATED THERETO
  FILE REFERENCE: HMV-038.02
  CURRENT APPLICATION NUMBER: US/09/538,106
  CURRENT FILING DATE:  2000-03-29
  PRIOR APPLICATION NUMBER: 09/174,493
  PRIOR FILING DATE: 1998-10-15
  PRIOR APPLICATION NUMBER: 60/087,216
  PRIOR FILING DATE: 1998-05-29
  PRIOR APPLICATION NUMBER: 60/062,076
  PRIOR FILING DATE: 1997-10-15
  NUMBER OF SEQ ID NOS: 53
  SOFTWARE: PatentIn Ver. 2.1
 SEQ ID NO 24
   LENGTH: 389
   TYPE: PRT
   ORGANISM: Murine sp.

Initial Score     =      7  Optimized Score  =     61  Significance =  2.40
Residue Identity =     18%  Matches          =     80  Mismatches   =   281
Gaps              =     65  Conservative Substitutions               =     0

          10        20        30        40    X   50        60        70
 MPSAKQRGSKGGHGAASPSEKGAHPSGGADDVAKKPPPAPQQPPPPPAPHPQQHPQQHPQNQAHGKGGHRGG
                                                       |        ||     |
                                             MLYLENNAQTQFSEPQYTNLGLLNSMDQ
                                             X        10        20

        80        90       100       110       120       130       140
 GGGGGKSSSS--SSASAAAAAAAASSSASCSRRLGRALNFLFYLALVAAAAFSGWCVHHVLEEVQQVRRSHQ
   | || |       |      | |  |  |    ||         |       |     |   ||
 QIQNGSSSTSPYNTDHAQNSVTAPSPYAQPS-STFDAL--SPSPAIPSNTDYPG--PHSFDVSFQQSSTAKS
 30        40        50        60        70        80        90

      150       160       170       180       190       200
 DFSRQREELGQGLQGVEQKVQSLQATFGT----FESILRSSQHK--QDLTEKAVKQGESEVSRISEVLQKLQ
      ||    |     |    |    |    |       |      |       ||    | ||     |
 ATWTYSTEL-KKLYCQIAKTCPIQIKVMTPPPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAP
   100       110       120       130       140       150       160

 210                 220       230       240       250       260
 NEIL------------KDLSDGIHVVKDARERDFTSLENTVEERLTELTKSINDNIAIFTEVQKRSQKEIND
   |              |   |   |    |       | |     | |      |          |    |
```

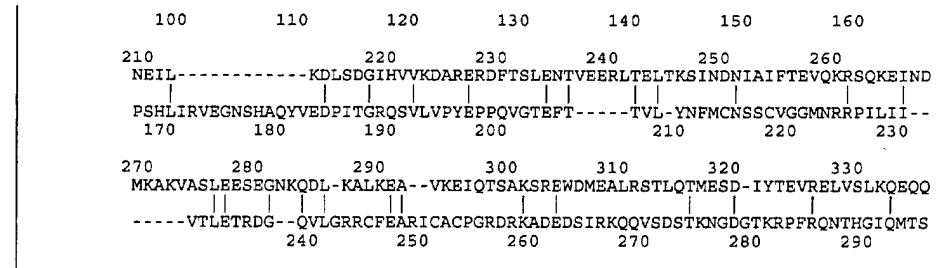


2. caa49535 (1-602)
US-09-538-106-18 Sequence 18, Application US/09538106

Sequence 18, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 18
LENGTH: 393
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 7 Optimized Score = 61 Significance = 2.40
Residue Identity = 19% Matches = 83 Mismatches = 278
Gaps = 69 Conservative Substitutions = 0

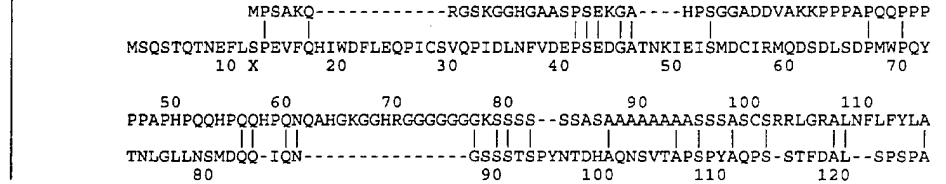


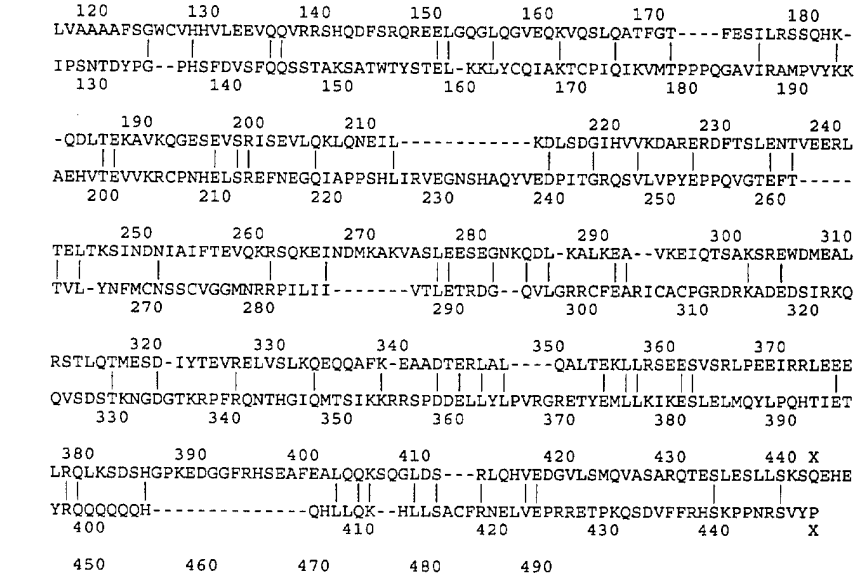


3. caa49535 (1-602)
US-09-538-106-15 Sequence 15, Application US/09538106

Sequence 15, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 15
LENGTH: 448
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 7 Optimized Score = 66 Significance = 2.40
Residue Identity = 18% Matches = 93 Mismatches = 296
Gaps = 101 Conservative Substitutions = 0

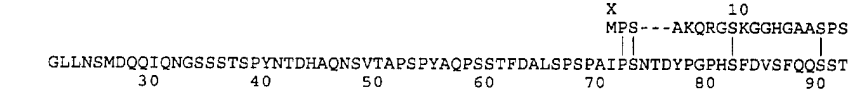


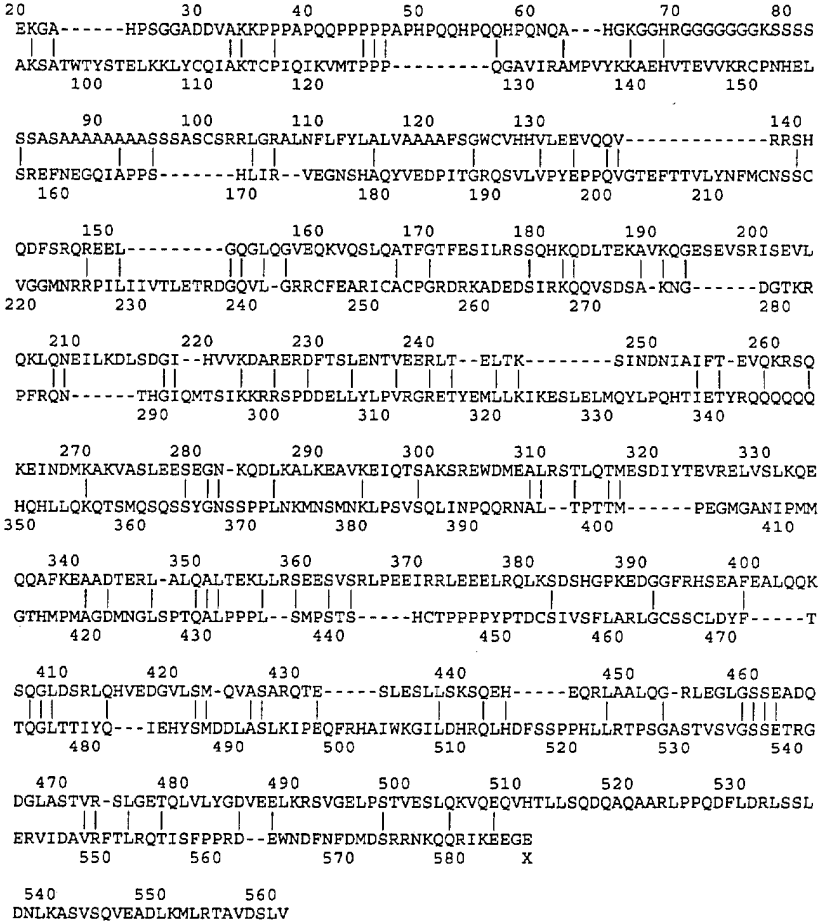


4. caa49535 (1-602)
US-09-538-106-22 Sequence 22, Application US/09538106

Sequence 22, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 22
LENGTH: 586
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 6 Optimized Score = 77 Significance = 1.20
Residue Identity = 19% Matches = 111 Mismatches = 343
Gaps = 119 Conservative Substitutions = 0



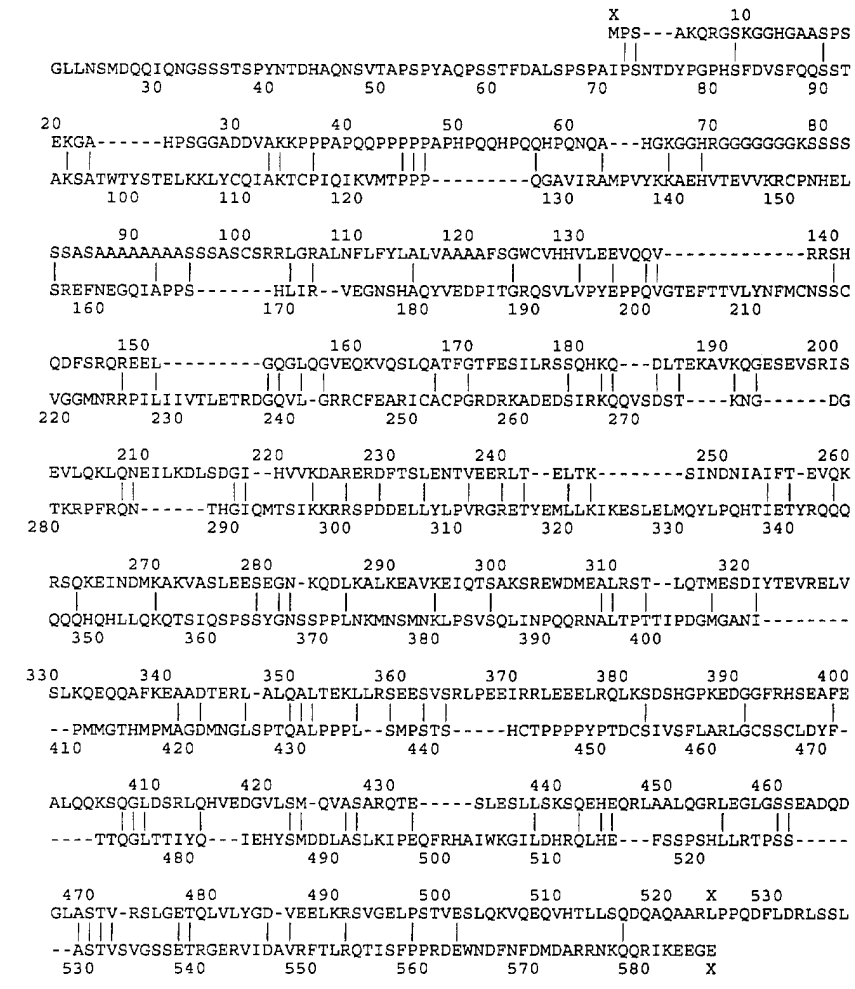


5. caa49535 (1-602)
US-09-538-106-16 Sequence 16, Application US/09538106

Sequence 16, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15

NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 16
LENGTH: 586
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 6 Optimized Score = 78 Significance = 1.20
Residue Identity = 19% Matches = 113 Mismatches = 341
Gaps = 132 Conservative Substitutions = 0

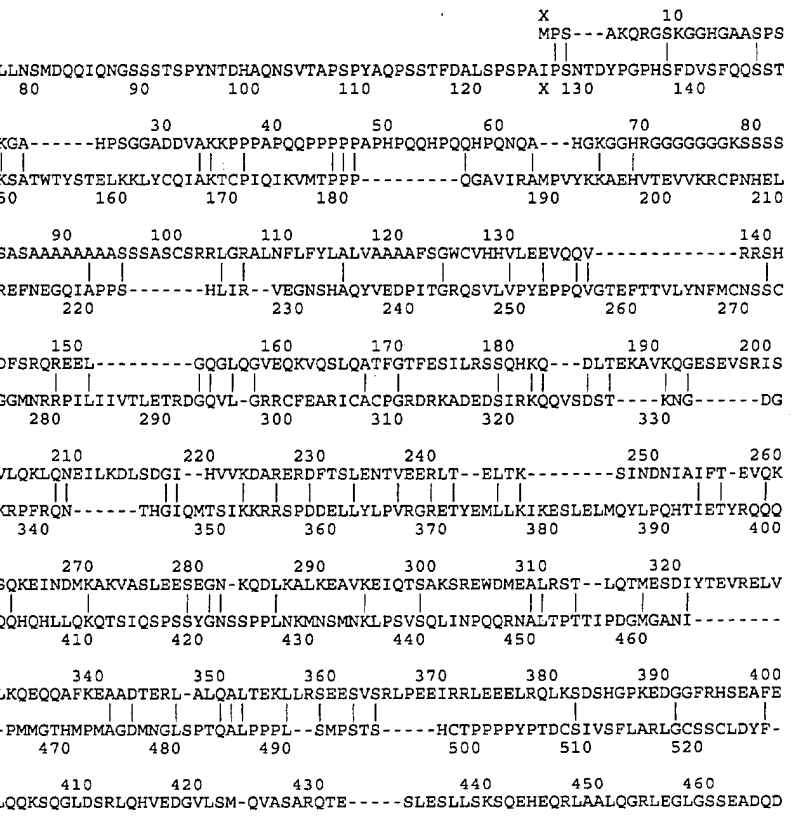


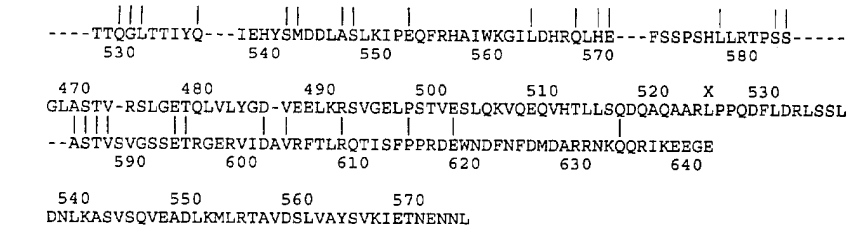
6. caa49535 (1-602)
US-09-538-106-13 Sequence 13, Application US/09538106

Sequence 13, Application US/09538106

GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 13
LENGTH: 641
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 6 Optimized Score = 78 Significance = 1.20
Residue Identity = 19% Matches = 113 Mismatches = 341
Gaps = 132 Conservative Substitutions = 0

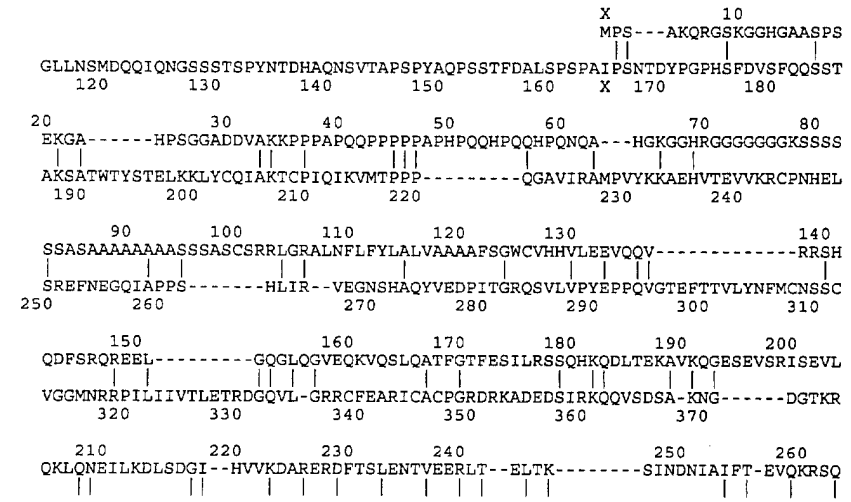


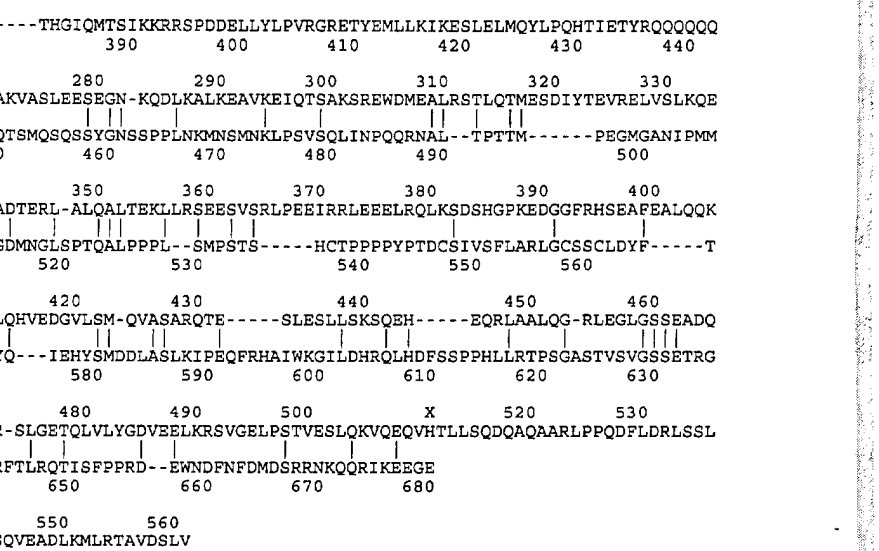


7. caa49535 (1-602)
US-09-538-106-19 Sequence 19, Application US/09538106

Sequence 19, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 19
LENGTH: 680
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 6 Optimized Score = 77 Significance = 1.20
Residue Identity = 19% Matches = 111 Mismatches = 343
Gaps = 119 Conservative Substitutions = 0

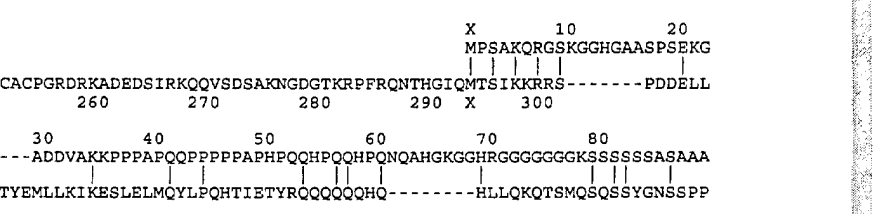


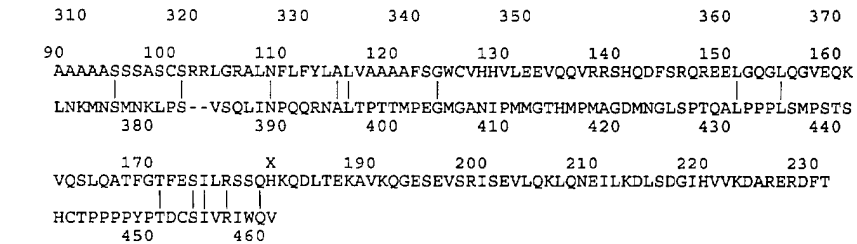


8. caa49535 (1-602)
US-09-538-106-23 Sequence 23, Application US/09538106

Sequence 23, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 23
LENGTH: 461
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 5 Optimized Score = 28 Significance = 0.00
Residue Identity = 17% Matches = 33 Mismatches = 131
Gaps = 22 Conservative Substitutions = 0

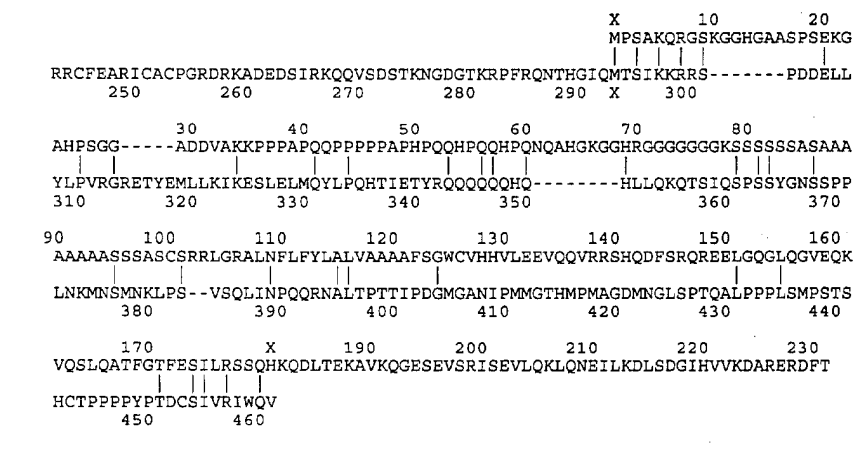




9. caa49535 (1-602)
US-09-538-106-17 Sequence 17, Application US/09538106

Sequence 17, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 17
LENGTH: 461
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 5 Optimized Score = 28 Significance = 0.00
Residue Identity = 17% Matches = 33 Mismatches = 131
Gaps = 22 Conservative Substitutions = 0

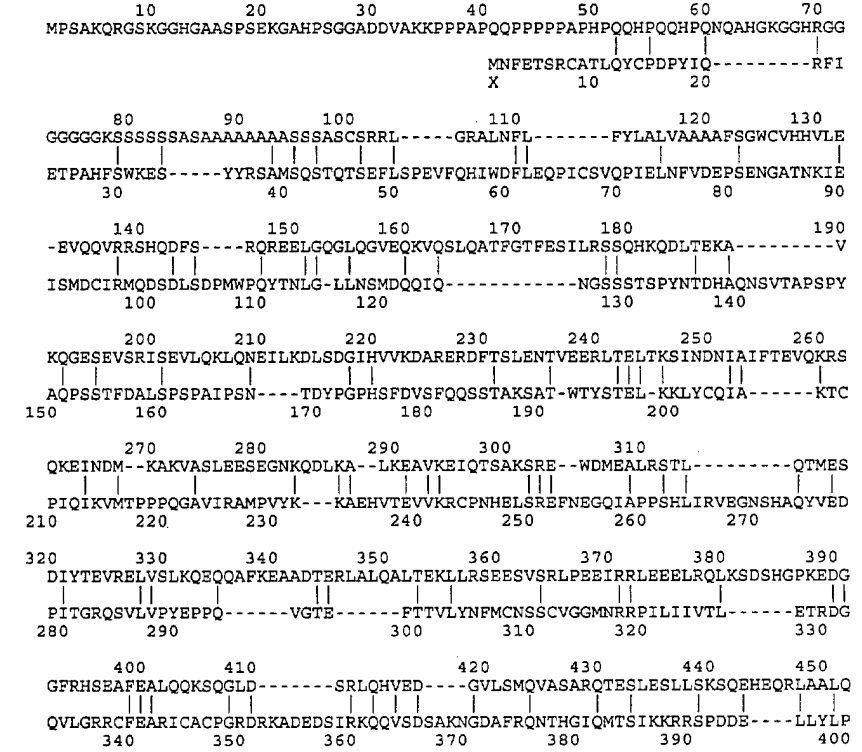


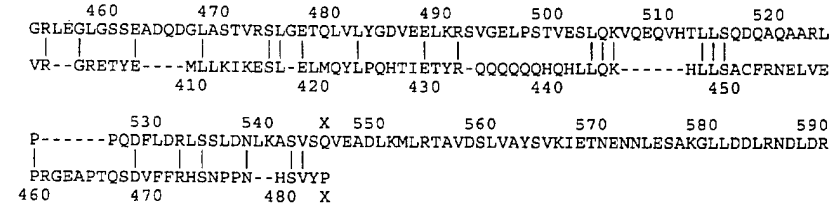
10. caa49535 (1-602)

US-09-538-106-21 Sequence 21, Application US/09538106

Sequence 21, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 21
LENGTH: 483
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 5 Optimized Score = 79 Significance = 0.00
Residue Identity = 20% Matches = 115 Mismatches = 310
Gaps = 138 Conservative Substitutions = 0



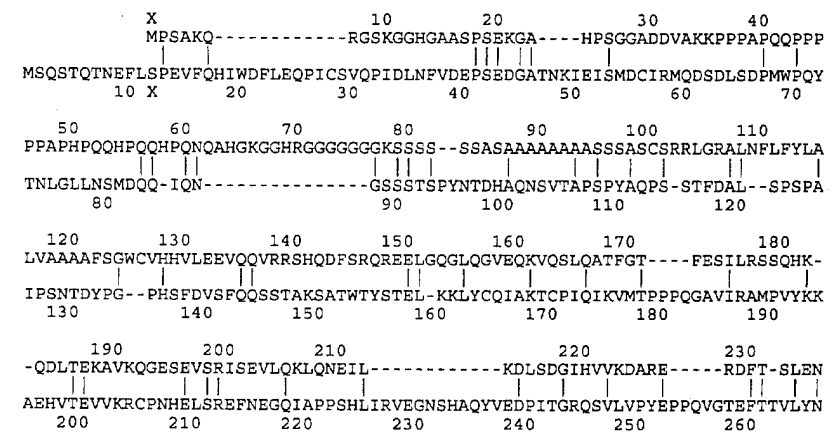


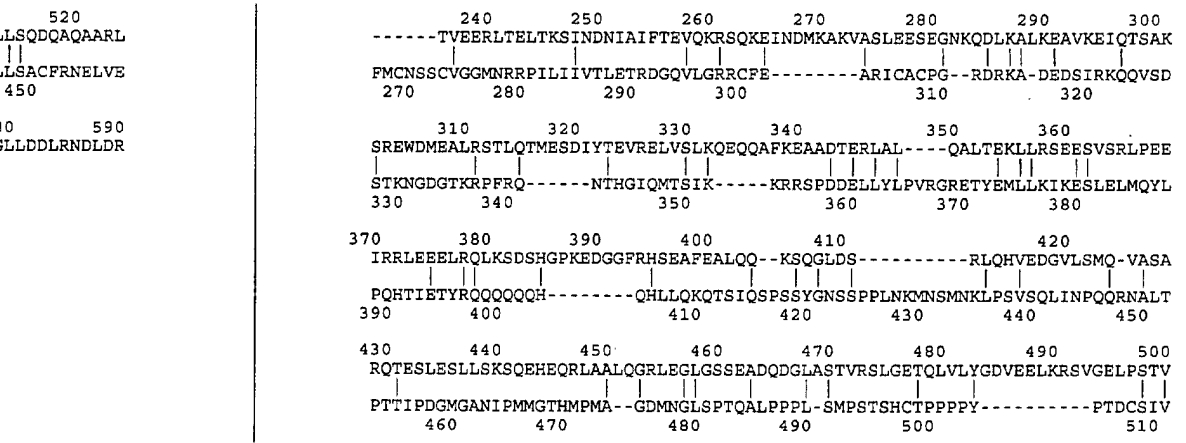
LFVKV

11. caa49535 (1-602)
US-09-538-106-14 Sequence 14, Application US/09538106

Sequence 14, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 14
LENGTH: 516
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 5 Optimized Score = 74 Significance = 0.00
Residue Identity = 18% Matches = 106 Mismatches = 334
Gaps = 130 Conservative Substitutions = 0

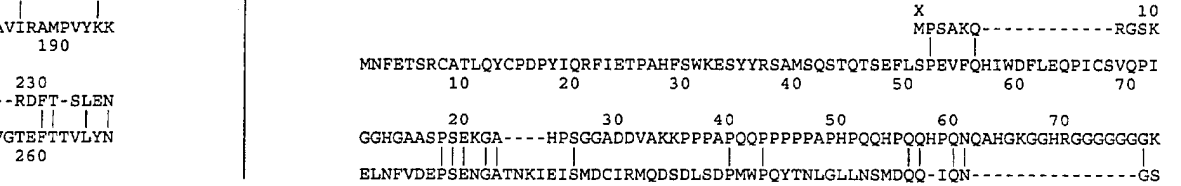


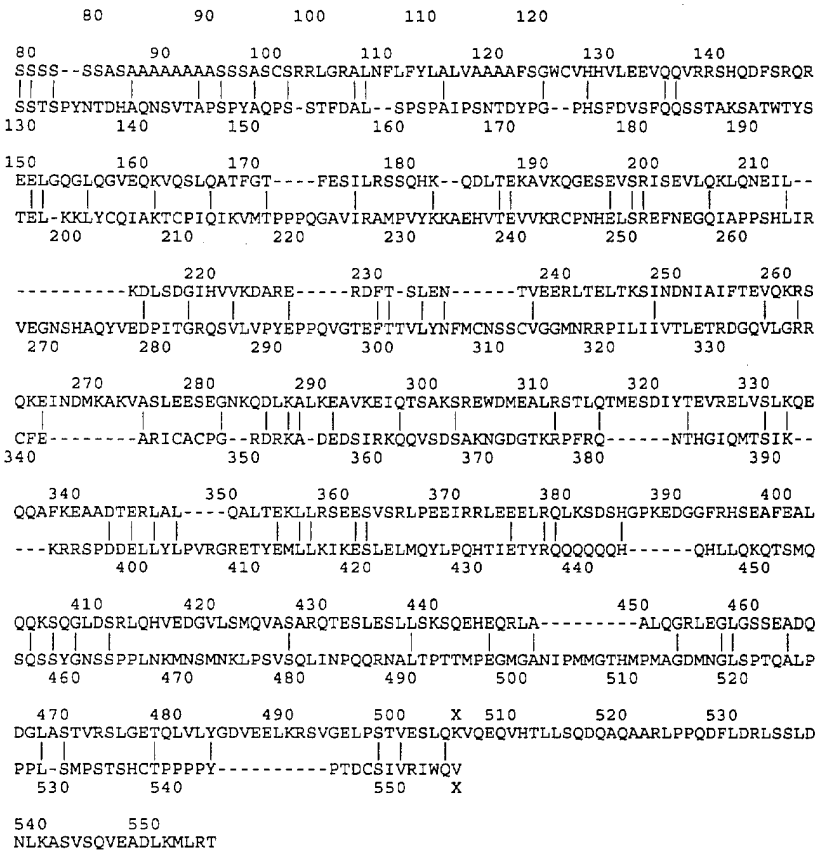


12. caa49535 (1-602)
US-09-538-106-20 Sequence 20, Application US/09538106

Sequence 20, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 20
LENGTH: 555
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 5 Optimized Score = 74 Significance = 0.00
Residue Identity = 18% Matches = 103 Mismatches = 341
Gaps = 122 Conservative Substitutions = 0




80 90 100 110 120
80 90 100 110 120 130 140
SSSS--SSASAAAAAAAASSSASCSRRLGRALNFLFYLALVAAAAFSGWCVHHVLEEVQQVRRSHQDFSRQR
SSTSPYNTDHAQNSVTAPSPYAQPS-STFDAL--SPSPAIPSNTDYPG--PHSFDVSFQQSSTAKSATWTYS
130 140 150 160 170 180 190
150 160 170 180 190 200 210
EELGQGLQGVEQKVQSLQATFGT----FESILRSSQHK--QDLTEKAVKQGESEVSRISEVLQKLQNEIL--
TEL-KKLYCQIAKTCPIQIKVMTPPPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIR
200 210 220 230 240 250 260
220 230 240 250 260
----------KDLSDGIHVVKDARE-----RDFT-SLEN------TVEERLTELTKSINDNIAIFTEVQKRS
VEGNSHAQYVEDPITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRR
270 280 290 300 310 320 330
270 280 290 300 310 320 330
QKEINDMKAKVASLEESEGNKQDLKALKEAVKEIQTSAKSREWDMEALRSTLQTMESDIYTEVRELVSLKQE
CFE--------ARICACPG--RDRKA-DEDSIRKQQVSDSAKNGDGTKRPFRQ------NTHGIQMTSIK--
340 350 360 370 380 390
340 350 360 370 380 390 400
QQAFKEAADTERLAL----QALTEKLLRSEESVSRLPEEIRRLEEELRQLKSDSHGPKEDGGFRHSEAFEAL
---KRRSPDDELLYLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQH------QHLLQKQTSMQ
400 410 420 430 440 450
410 420 430 440 450 460
QQKSQGLDSRLQHVEDGVLSMQVASARQTESLESLLSKSQEHEQRLA---------ALQGRLEGLGSSEADQ
SQSSYGNSSPPLNKMNSMNKLPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALP
460 470 480 490 500 510 520
470 480 490 500 X 510 520 530
DGLASTVRSLGETQLVLYGDVEELKRSVGELPSTVESLQKVQEQVHTLLSQDQAQAARLPPQDFLDRLSSLD
PPL-SMPSTSHCTPPPPY----------PTDCSIVRIWQV
530 540 550 X
540 550
NLKASVSQVEADLKMLRT

```
> O <
O| |O  IntelliGenetics
> O <
```

FastDB - Fast Pairwise Comparison of Sequences
Release 5.4

Results file s33377.res made by bshears on Wed 9 Jun 104 10:09:36-PDT.

Query sequence being compared: s33377 (1-601)
Number of sequences searched: 12
Number of scores above cutoff: 12

Results of the initial comparison of s33377 (1-601) with:
File : /home/bshears/new.pep

```
    100-
       -
N      -
U   50-
M      -
B      -
E      -
R      -
       -
O      -
F   10-
       -
S      -
E    5-                                             *       *
Q      -
U      -
E      -                                     *
N      -
C      -
E      -
S    0-------------------------------------------------------------------
      ||   |  |   |    ||    |     | |   |   |   |     |     |
SCORE 0|   1  |   2    |2    3     4 |   5   |   5     6     7
STDEV -7     -6       -4     -3      -1      0
```

PARAMETERS

Similarity matrix	Unitary	K-tuple	2
Mismatch penalty	1	Joining penalty	20
Gap penalty	1.00	Window size	32
Gap size penalty	0.05		
Cutoff score	0		
Randomization group	0		

SEARCH STATISTICS

Scores:	Mean	Median	Standard Deviation
	6	7	0.72
Times:	CPU		Total Elapsed
	00:00:00.00		00:00:00.00

Number of residues: 6199
Number of sequences searched: 12
Number of scores above cutoff: 12

The scores below are sorted by initial score.
Significance is calculated based on initial score.

A 100% identical sequence to the query sequence was not found.

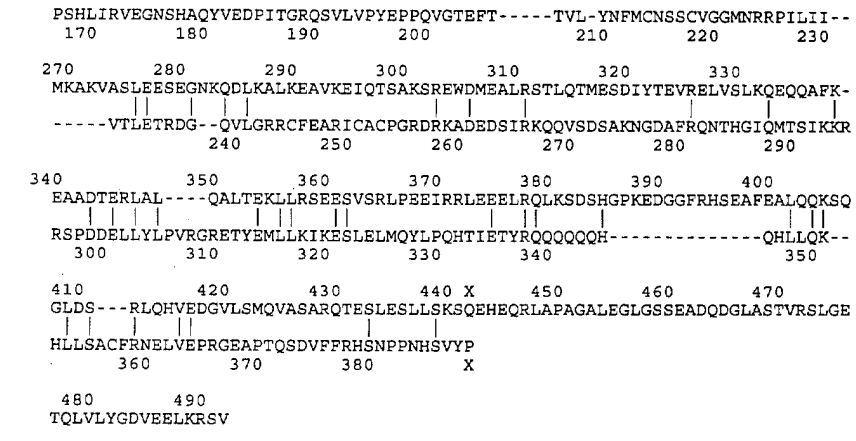
The list of best scores is:

Sequence Name	Description	Length	Init. Score	Opt. Score	Sig.	Frame
**** 1 standard deviation above mean ****						
1. US-09-538-106-24	Sequence 24, Application	389	7	61	1.39	0
2. US-09-538-106-18	Sequence 18, Application	393	7	61	1.39	0
3. US-09-538-106-15	Sequence 15, Application	448	7	66	1.39	0
4. US-09-538-106-21	Sequence 21, Application	483	7	66	1.39	0
**** 0 standard deviation from mean ****						
5. US-09-538-106-23	Sequence 23, Application	461	6	58	0.00	0
6. US-09-538-106-17	Sequence 17, Application	461	6	58	0.00	0
7. US-09-538-106-22	Sequence 22, Application	586	6	79	0.00	0
8. US-09-538-106-16	Sequence 16, Application	586	6	78	0.00	0
9. US-09-538-106-13	Sequence 13, Application	641	6	78	0.00	0
10. US-09-538-106-19	Sequence 19, Application	680	6	79	0.00	0
**** 1 standard deviation below mean ****						
11. US-09-538-106-14	Sequence 14, Application	516	5	75	-1.39	0
12. US-09-538-106-20	Sequence 20, Application	555	5	76	-1.39	0

1. s33377 (1-601)
US-09-538-106-24 Sequence 24, Application US/09538106

Sequence 24, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 24
LENGTH: 389
TYPE: PRT
ORGANISM: Murine sp.

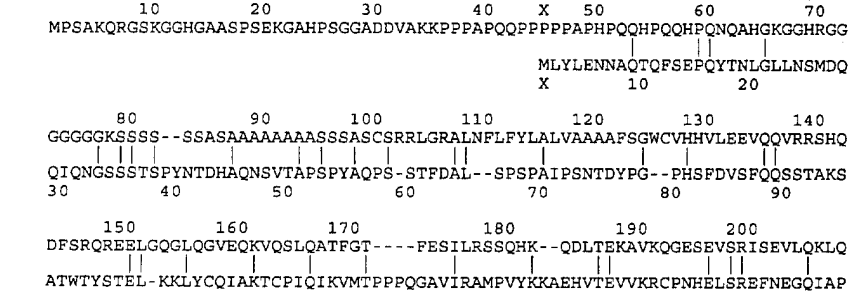
```
Initial Score     =     7  Optimized Score   =     61  Significance =  1.39
Residue Identity  =   18%  Matches           =     80  Mismatches   =   281
Gaps              =    65  Conservative Substitutions                 =     0

         10        20        30        40   X   50        60        70
  MPSAKQRGSKGGHGAASPSEKGAHPSGGADDVAKKPPPAPQQPPPPPAPHPQQHPQQHPQNQAHGKGGHRGG
                                                        |       | |    |
                                            MLYLENNAQTQFSEPQYTNLGLLNSMDQ
                                            X        10        20

         80        90       100       110       120       130       140
  GGGGGKSSSS--SSASAAAAAAAASSSASCSRRLGRALNFLFYLALVAAAAFSGWCVHHVLEEVQQVRRSHQ
      | || |     |     | |  |  |   ||    |        |   |    ||
  QIQNGSSSTSPYNTDHAQNSVTAPSPYAQPS-STFDAL--SPSPAIPSNTDYPG--PHSFDVSFQQSSTAKS
  30        40        50         60        70        80        90

        150       160       170       180       190       200
  DFSRQREELGQGLQGVEQKVQSLQATFGT----FESILRSSQHK--QDLTEKAVKQGESEVSRISEVLQKLQ
       ||   |     |    |    |      |     |    ||        | ||     |
  ATWTYSTEL-KKLYCQIAKTCPIQIKVMTPPPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAP
     100       110       120       130       140       150       160

  210               220       230       240       250       260
  NEIL------------KDLSDGIHVVKDARERDFTSLENTVEERLTELTKSINDNIAIFTEVQKRSQKEIND
     |            |   |   |    |     | |     | |      |         |    |
```

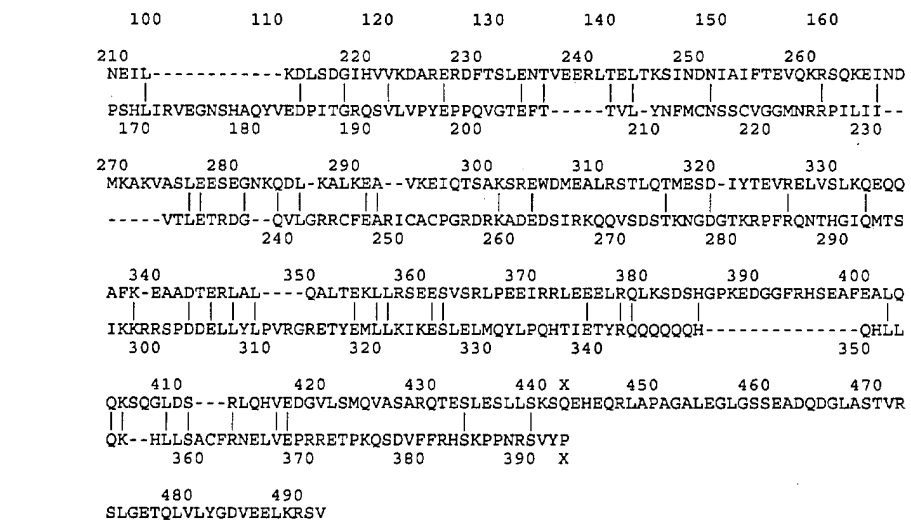


2. s33377 (1-601)
US-09-538-106-18 Sequence 18, Application US/09538106

Sequence 18, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 18
LENGTH: 393
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 7 Optimized Score = 61 Significance = 1.39
Residue Identity = 19% Matches = 83 Mismatches = 278
Gaps = 69 Conservative Substitutions = 0

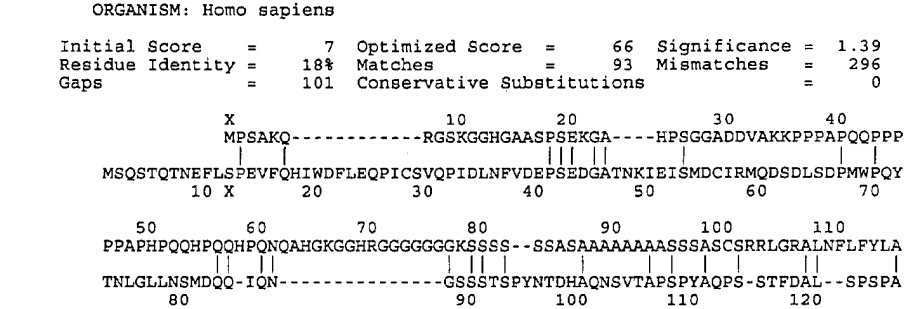


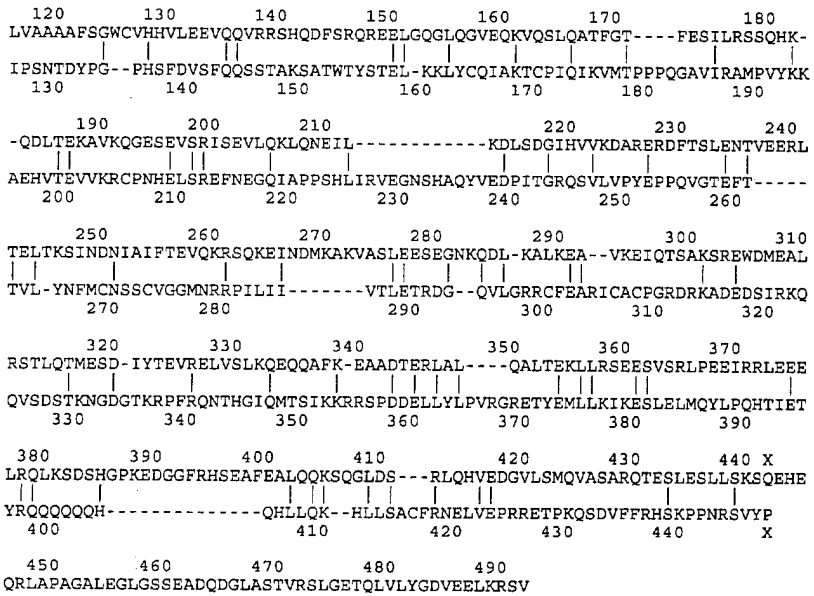


3. s33377 (1-601)
US-09-538-106-15 Sequence 15, Application US/09538106

Sequence 15, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 15
LENGTH: 448
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 7 Optimized Score = 66 Significance = 1.39
Residue Identity = 18% Matches = 93 Mismatches = 296
Gaps = 101 Conservative Substitutions = 0

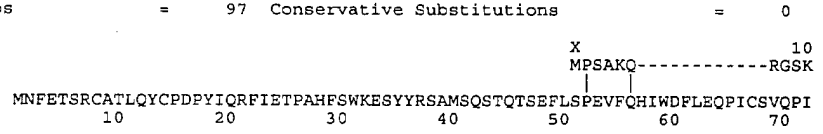


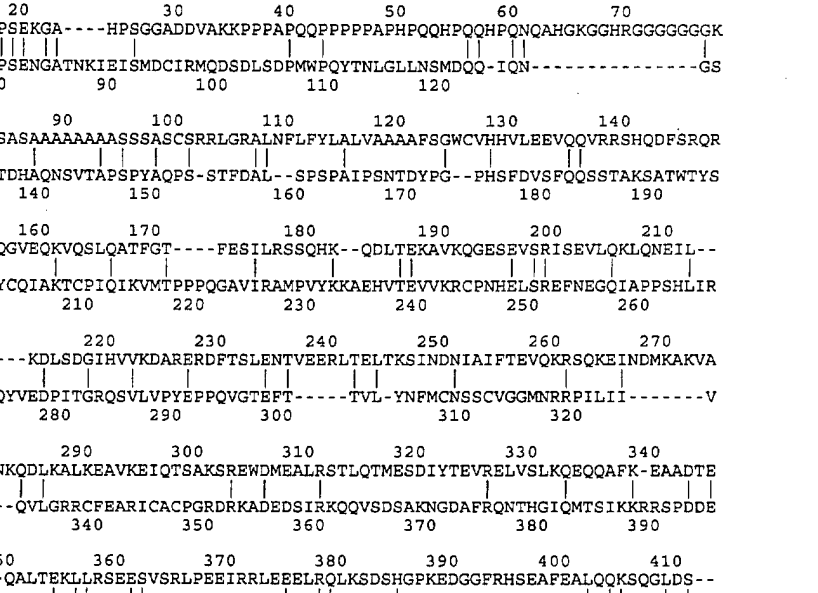


4. s33377 (1-601)
US-09-538-106-21 Sequence 21, Application US/09538106

Sequence 21, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 21
LENGTH: 483
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 7 Optimized Score = 66 Significance = 1.39
Residue Identity = 18% Matches = 90 Mismatches = 299
Gaps = 97 Conservative Substitutions = 0

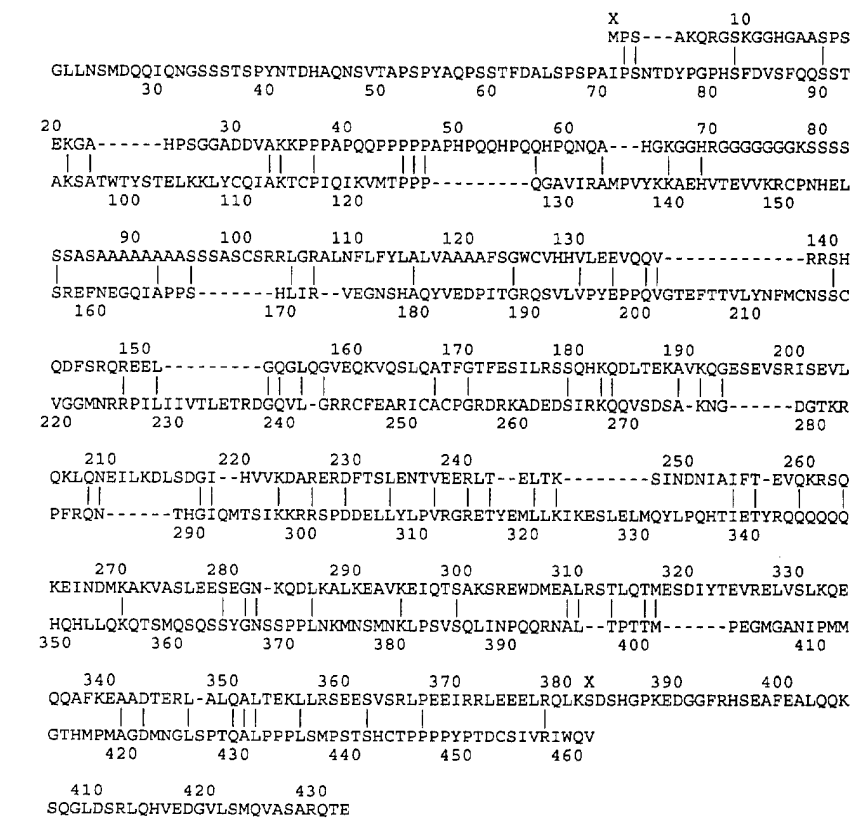




5. s33377 (1-601)
US-09-538-106-23 Sequence 23, Application US/09538106

Sequence 23, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 23
LENGTH: 461
TYPE: PRT
ORGANISM: Murine sp.

```
Initial Score     =      6  Optimized Score  =     58  Significance =  0.00
Residue Identity  =    18%  Matches          =     81  Mismatches   =   261
Gaps              =     89  Conservative Substitutions               =     0
```

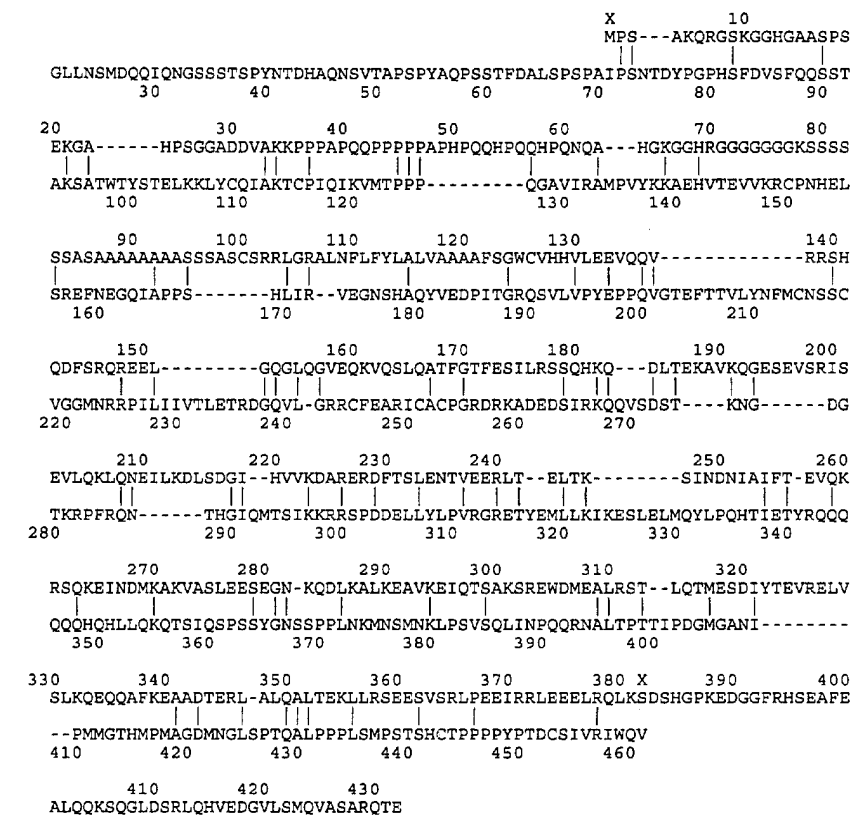


6. s33377 (1-601)
US-09-538-106-17 Sequence 17, Application US/09538106

Sequence 17, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53

SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 17
LENGTH: 461
TYPE: PRT
ORGANISM: Homo sapiens

```
Initial Score     =      6  Optimized Score  =     58  Significance =  0.00
Residue Identity  =    18%  Matches          =     82  Mismatches   =   255
Gaps              =     99  Conservative Substitutions               =     0
```

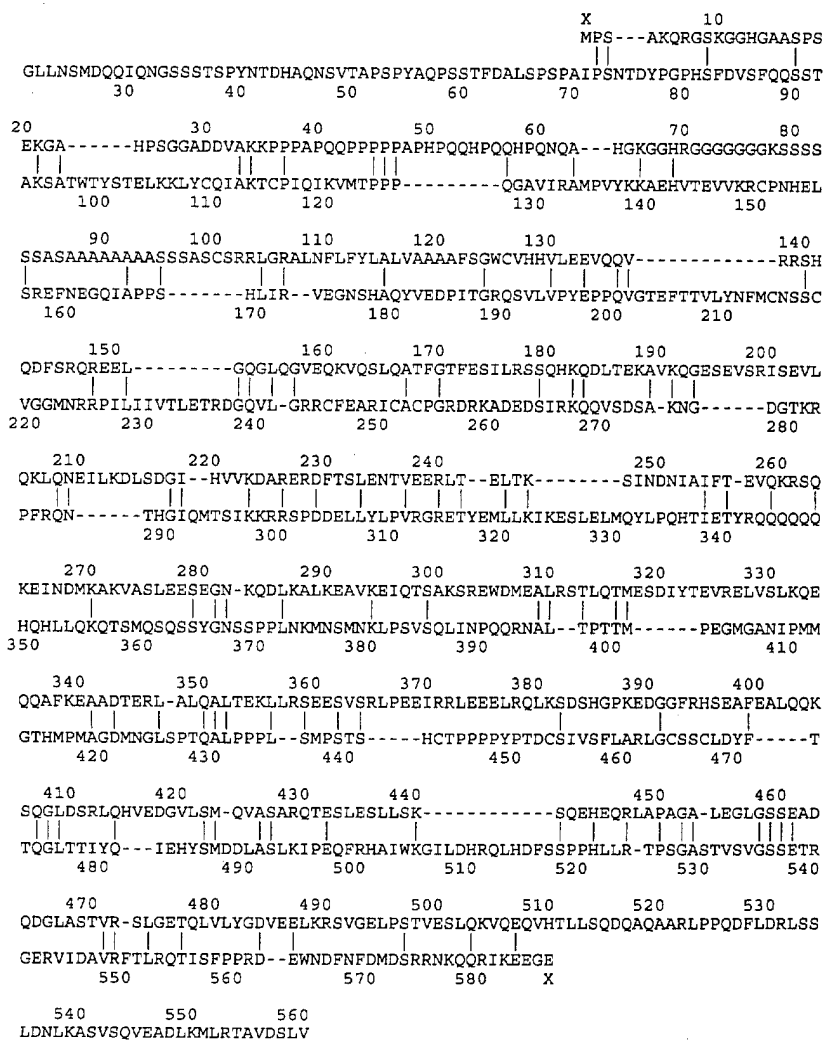


7. s33377 (1-601)
US-09-538-106-22 Sequence 22, Application US/09538106

Sequence 22, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15

PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 22
LENGTH: 586
TYPE: PRT
ORGANISM: Murine sp.

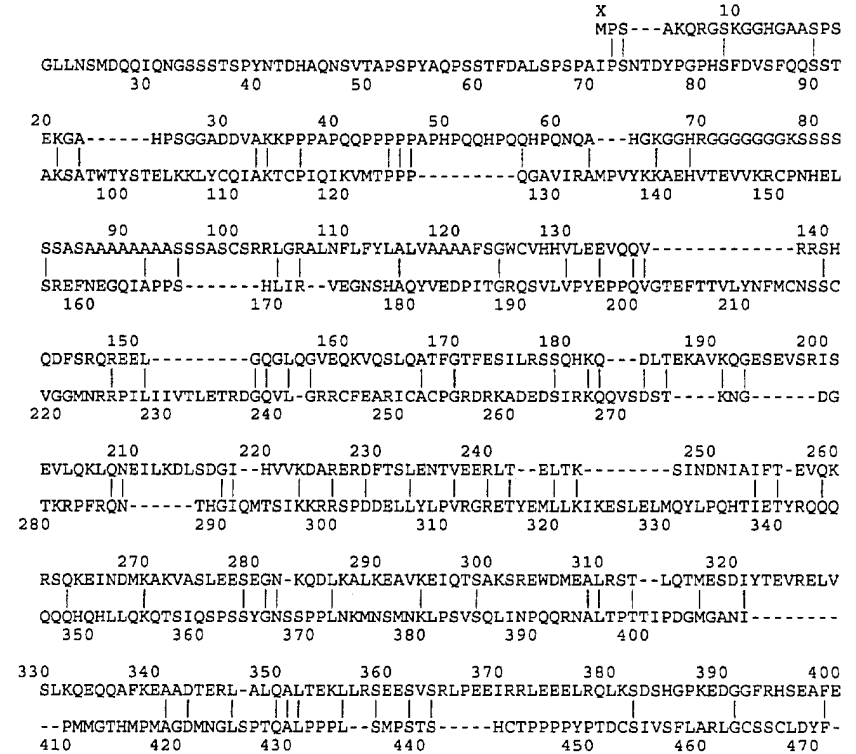
Initial Score	=	6	Optimized Score	=	79	Significance =	0.00
Residue Identity	=	19%	Matches	=	113	Mismatches =	339
Gaps	=	122	Conservative Substitutions			=	0

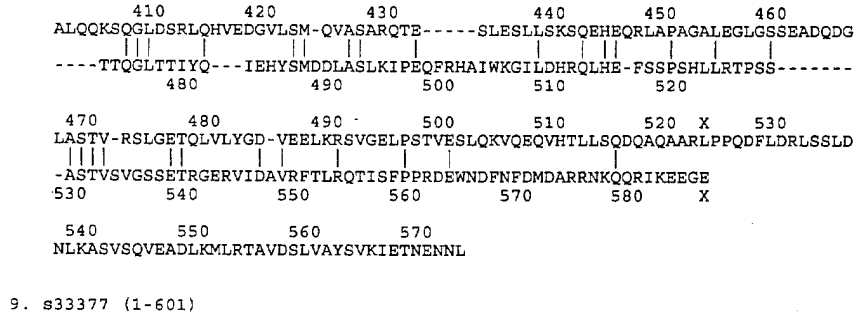


8. s33377 (1-601)
US-09-538-106-16 Sequence 16, Application US/09538106

Sequence 16, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 16
LENGTH: 586
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score	=	6	Optimized Score	=	78	Significance =	0.00
Residue Identity	=	19%	Matches	=	113	Mismatches =	341
Gaps	=	131	Conservative Substitutions			=	0

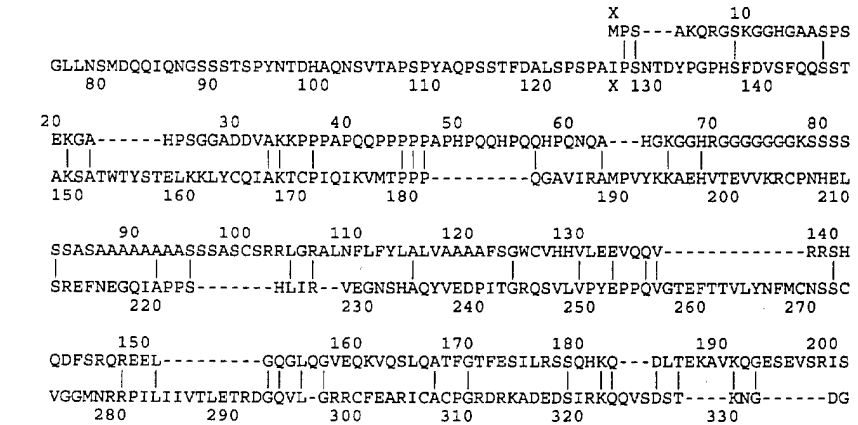


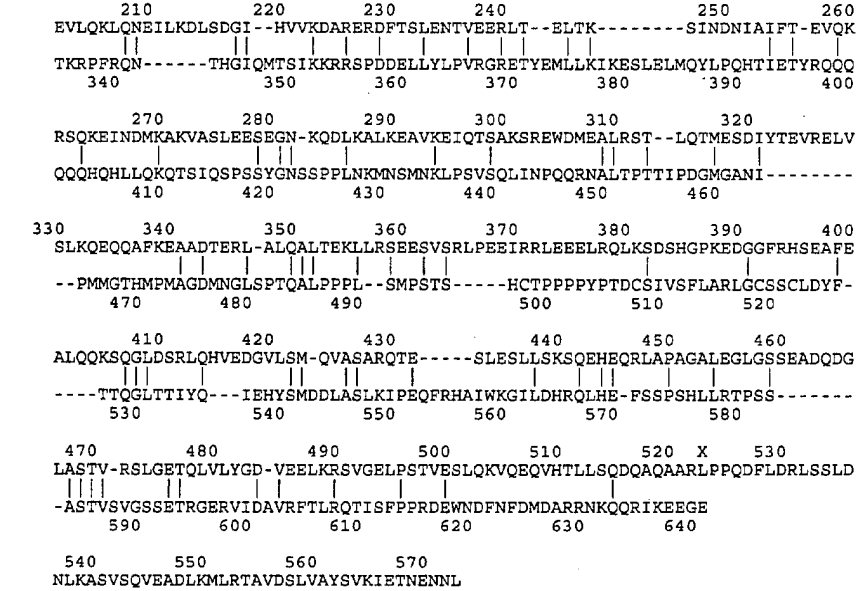


9. s33377 (1-601)
US-09-538-106-13 Sequence 13, Application US/09538106

Sequence 13, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 13
LENGTH: 641
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 6 Optimized Score = 78 Significance = 0.00
Residue Identity = 19% Matches = 113 Mismatches = 341
Gaps = 131 Conservative Substitutions = 0

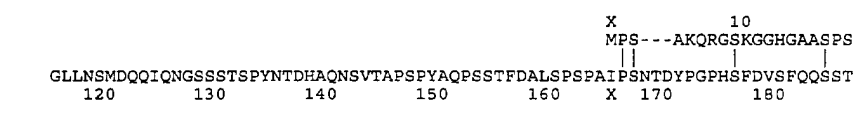


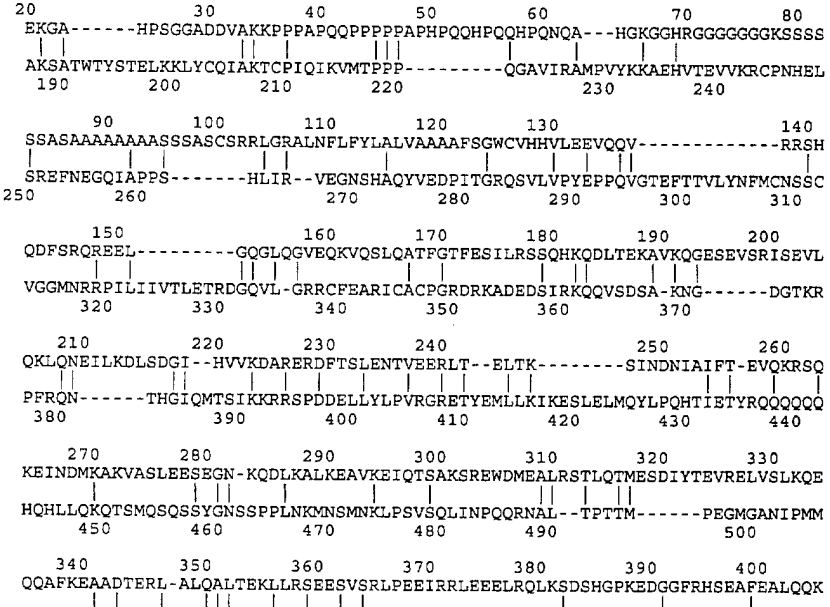


10. s33377 (1-601)
US-09-538-106-19 Sequence 19, Application US/09538106

Sequence 19, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 19
LENGTH: 680
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 6 Optimized Score = 79 Significance = 0.00
Residue Identity = 19% Matches = 113 Mismatches = 339
Gaps = 122 Conservative Substitutions = 0

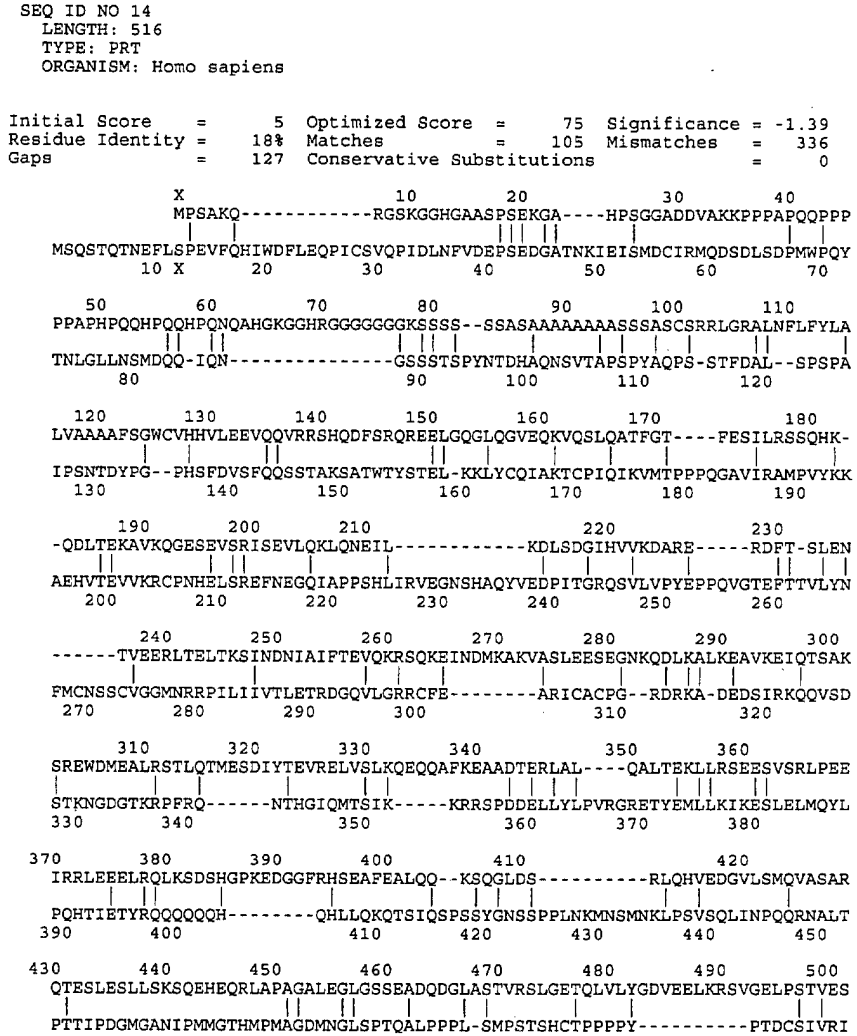




11. s33377 (1-601)
US-09-538-106-14 Sequence 14, Application US/09538106

Sequence 14, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK
APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 14
LENGTH: 516
TYPE: PRT
ORGANISM: Homo sapiens

Initial Score = 5 Optimized Score = 75 Significance = -1.39
Residue Identity = 18% Matches = 105 Mismatches = 336
Gaps = 127 Conservative Substitutions = 0



12. s33377 (1-601)
US-09-538-106-20 Sequence 20, Application US/09538106

Sequence 20, Application US/09538106
GENERAL INFORMATION:
APPLICANT: MCKEON, FRANK

APPLICANT: YANG, ANNIE
APPLICANT: LODA, MASSIMO
APPLICANT: SIGNORETTI, SABINA
APPLICANT: CRUM, CHRISTOPHER
TITLE OF INVENTION: CELL REGULATORY GENES, ENCODED PRODUCTS, AND USES
TITLE OF INVENTION: RELATED THERETO
FILE REFERENCE: HMV-038.02
CURRENT APPLICATION NUMBER: US/09/538,106
CURRENT FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: 09/174,493
PRIOR FILING DATE: 1998-10-15
PRIOR APPLICATION NUMBER: 60/087,216
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/062,076
PRIOR FILING DATE: 1997-10-15
NUMBER OF SEQ ID NOS: 53
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 20
LENGTH: 555
TYPE: PRT
ORGANISM: Murine sp.

Initial Score = 5 Optimized Score = 76 Significance = -1.39
Residue Identity = 18% Matches = 105 Mismatches = 338
Gaps = 123 Conservative Substitutions = 0

```
                                                  X                   10
                                                  MPSAKQ------------RGSK

   MNFETSRCATLQYCPDPYIQRFIETPAHFSWKESYYRSAMSQSTQTSEFLSPEVFQHIWDFLEQPICSVQPI
            10        20        30        40        50        60        70

            20            30        40        50        60        70
   GGHGAAASPSEKGA----HPSGGADDVAKKPPPAPQQPPPPPAPHPQQHPQQHPQNQAHGKGGHRGGGGGGGK
           |||| ||       |           | | |          || ||                    |
   ELNFVDEPSENGATNKIEISMDCIRMQDSDLSDPMWPQYTNLGLLNSMDQQ-IQN--------------GS
         80        90       100       110       120

   80          90        100       110       120       130       140
   SSSS--SSASAAAAAAAASSSASCSRRLGRALNFLFYLALVAAAAFSGWCVHHVLEEVQQVRRSHQDFSRQR
   || |       |     | | | | |     ||       |         |   |       ||
   SSTSPYNTDHAQNSVTAPSPYAQPS-STFDAL--SPSPAIPSNTDYPG--PHSFDVSFQQSSTAKSATWTYS
  130       140       150           160       170       180       190

  150       160       170           180       190       200       210
   EELGQGLQGVEQKVQSLQATFGT----FESILRSSQHK--QDLTEKAVKQGESEVSRISEVLQKLQNEIL--
    ||  |     |     |   |       |     |    ||         | ||     |       |
   TEL-KKLYCQIAKTCPIQIKVMTPPPQGAVIRAMPVYKKAEHVTEVVKRCPNHELSREFNEGQIAPPSHLIR
      200       210       220       230       240       250       260

                  220           230           240       250       260
   ----------KDLSDGIHVVKDARE-----RDFT-SLEN------TVEERLTELTKSINDNIAIFTEVQKRS
             |   |   |   |       ||  | |         |       |       |   | |
   VEGNSHAQYVEDPITGRQSVLVPYEPPQVGTEFTTVLYNFMCNSSCVGGMNRRPILIIVTLETRDGQVLGRR
    270       280       290       300       310       320       330

        270       280       290       300       310       320       330
   QKEINDMKAKVASLEESEGNKQDLKALKEAVKEIQTSAKSREWDMEALRSTLQTMESDIYTEVRELVSLKQE
     |       |       |   | ||  |       |   |       |       |       | | |
   CFE--------ARICACPG--RDRKA-DEDSIRKQQVSDSAKNGDGTKRPFRQ------NTHGIQMTSIK--
  340                 350       360       370       380           390

     340           350       360       370       380       390       400
   QQAFKEAADTERLAL----QALTEKLLRSEESVSRLPEEIRRLEEELRQLKSDSHGPKEDGGFRHSEAFEAL
            | | | |          | ||   ||          |     ||      |
   ---KRRSPDDELLYLPVRGRETYEMLLKIKESLELMQYLPQHTIETYRQQQQQQH------QHLLQKQTSMQ
           400       410       420       430       440           450

        410                 420       430       440       450       460
   QQKSQGLDS----------RLQHVEDGVLSMQVASARQTESLESLLSKSQEHEQRLAPAGALEGLGSSEADQ
    | | | |            | |       |       |   |                 ||   ||      |
   SQSSYGNSSPPLNKMNSMNKLPSVSQLINPQQRNALTPTTMPEGMGANIPMMGTHMPMAGDMNGLSPTQALP
      460       470       480       490       500       510       520
```

```
    470       480       490       500   X   510       520       530
DGLASTVRSLGETQLVLYGDVEELKRSVGELPSTVESLQKVQEQVHTLLSQDQAQAARLPPQDFLDRLSSLD
  | |       |   |             |   | |   |
PPL-SMPSTSHCTPPPPY----------PTDCSIVRIWQV
  530       540               550   X

 540       550
NLKASVSQVEADLKMLRT
```